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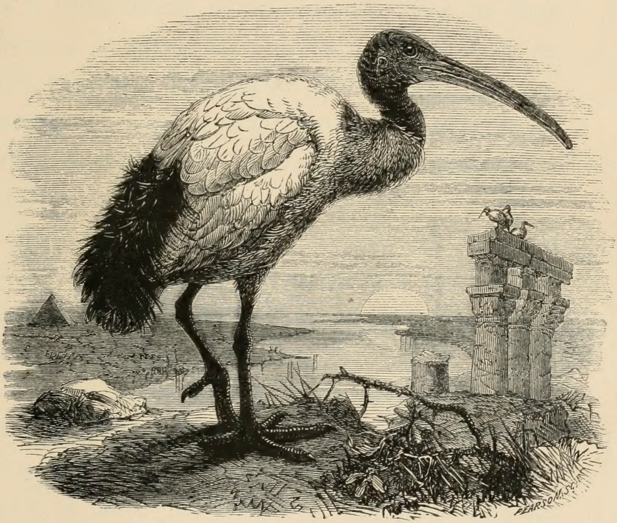
THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY
OSBERT SALVIN, M.A., F.L.S., F.Z.S., &c.



VOL. I. 1871.

THIRD SERIES.

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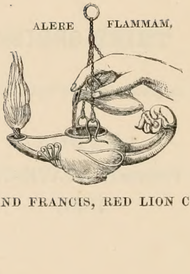
ALERE FLAMMAM.

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PREFACE.

It was not without hesitation that, in compliance with the request of my valued friend and predecessor Professor Newton, I offered my services as Editor of a Third Series of this Journal, when he from pressure of other engagements was obliged to resign the post. I felt considerable diffidence in my powers to carry on 'The Ibis' with ability at all equal to that which has supported it during the twelve years of its existence.

Though I trust that fewer defects will be found in future Volumes, I still hope that the present one may not be considered unworthy of those that have appeared before it.

My best thanks are due for the assistance I have received from many quarters; but to Mr. Sclater I owe a special debt for cordial and ready help, of which I have not hesitated very frequently to avail myself.

O. S.

32 The Grove, Boltons, London.
September 1871.

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THE IBIS.

THIRD SERIES.

No. I. JANUARY 1871.

I.—*A Revision of the Species of the Fringilline Genus* Spermophila. By P. L. Sclater, M.A., Ph.D., F.R.S.

(Plates I. & II.)

Up to the present time the best, and, indeed, it may be said the only authority worth referring to on the American Finches of the genus *Spermophila* has been Bonaparte's 'Conspectus Generum Avium.' In that well-known work this and the allied genera of Fringillidæ are treated of with unusual accuracy, and short but, in most cases, sufficient diagnoses are added to the synonyms of the different species. In my 'Catalogue of American Birds' I have relied mainly upon Bonaparte's arrangement of the genus *Spermophila,* merely altering the order to a certain extent, and including among the true *Spermophilæ* the species which Bonaparte has placed in the second division of his genus *Sporophila* (*l. c.* p. 499).

Since the publication of my Catalogue I have added not inconsiderably to my collection of these Finches, and during the leisure hours of the past summer have bestowed a good deal of pains upon the examination of the 80 specimens of which it now consists. I have also taken the opportunity of a visit to Paris to look through the examples of this genus in the French National Collection, amongst which are several of Bonaparte's types. Mr. G. N. Lawrence, of New York, has most kindly assisted me in this matter by the loan of a series of 22 specimens of this genus from his private collection, amongst which are the types of several recently described species; and the authorities of the Smithsonian Institution, with their accustomed liberality, have likewise transmitted to me the whole of their examples of *Spermophilæ* for my examination.

Under these favourable circumstances I have been able to effect a revision of the species of this rather obscure genus of Fringillidæ, which, I think, may be not unacceptable to Naturalists. First I propose to treat of the species actually known to me from inspection. These are 24 in number—of all of which I am so fortunate as to possess specimens. Secondly I give some short notices of described species which have not yet come under my examination. And lastly I will say a few words about the geographical distribution of the genus.

I. *Revision of the species of* Spermophila *known to the author.*

Following Bonaparte's idea, we may divide the *Spermophilæ* into two groups—the *Pyrrhomelanæ*, of which the colours are principally rufous and black, and the *Leucomelanæ*, in which they are white and black. To the latter section I append, as already done in my Catalogue of American birds, the species placed by Bonaparte in the second section of his genus *Sporophila*, as although in some of them the bill is much stouter than in the typical *Spermophilæ*, in others this is not the case; and this little group of species is certainly more naturally placed here than with the *Oryzobori* (*i. e. Sporophilæ*, Bonaparte nec Cabanis).

The eight species of *Spermophilæ pyrrhomelanæ* known to me may be divided as follows:—

Clavis *Spermophilinarum pyrrhomelanarum.*

a. subtus unicolores, rufæ aut cinnamomeæ.		
a′. pileo cinereo	subtus rubro-fusca	1. *minuta.*
	subtus ochraceo-fusca	2. *hypoxantha.*
b′. pileo nigro.		
a′. interscapulio concolori.		
	subtus cinnamomea	3. *nigro-aurantia.*
	subtus lactescenti-alba	4. *pileata.*
b″. interscapulio nigro		5. *nigro-rufa.*
b. subtus rufa, nigro torquata		6. *torqueola.*
c. subtus plumbea, medialiter castanea		7. *castaneiventris.*
d. subtus alba, gutture rufo		8. *telasco.*

1. Spermophila minuta.

Loxia minuta, Linn. S. N. i. 307.

Pyrrhula minuta, Vieill. Enc. Méth. p. 1026.

Sporophila minuta, Cab. Mus. Hein. p. 150.

Spermophila minuta, Gray, Gen. p. 386; Bp. Consp. p. 495; Sclater, P. Z. S. 1855, p. 160, et Cat. A. B. p. 104; Scl. et Salv. P. Z. S. 1864, p. 352; Lawr. Ann. L. N. Y. vii. p. 333.

Bouvreuil à ventre roux de Cayenne, Buff. Pl. Enl. 319. fig. 2.

Loxia fusciventer, Bodd.

Spermophila fusciventris, Gray, Gen. p. 386; Jard. Ann. N. H. xx. p. 333 (1847).

Fuscescenti-cinerea: alis caudaque nigricantibus, speculo alari albo: uropygio et corpore subtus testaceo-rubris: long tota 3·7 poll.; alæ 2·1; caudæ 1·6. *Fem.* olivaceo-fusca: alis caudaque obscurioribus: subtus pallide ochracea, ventre albescente.

Hab. Cayenne (*Mus. P.L.S.*); Venezuela (*Levraud*); Trinidad (*Mus. Smiths.*); Tobago (*Kirk*); Bogota (*Mus. P.L.S.*); Panama (*Mc Leannan*).

Of this species I have examples from Cayenne, Tobago, and New Granada (Bogota). Mr. Lawrence's collection contains specimens of both sexes from Panama, and the Smithsonian series one, "received from Trinidad," where, however, as it is found in Tobago, it would be nearly sure to occur. In the Paris Museum are skins of this *Spermophila* transmitted from Caracas by M. Levraud.

I have never seen examples of this bird from any part of the Amazonian region or from Brazil; nor did Natterer obtain it; so that it probably does not occur in these countries. In Southern Brazil, Uruguay, and Paraguay its place is taken by the next species, *S. hypoxantha*. To the latter species also (following v. Pelzeln) I am inclined to refer D'Orbigny's *S. minuta* from Bolivia, though the only specimens of D'Orbigny's in the Paris Museum which I could find were not quite adult, and seemed to me rather dubious.

2. Spermophila hypoxantha.

Pico grueso pardo y canela, Azar. Apunt. i. p. 444.

Pyrrhula minuta, Lafr. et D'Orb. Syn. Av. p. 87.

Fringilla hypoxantha, Licht. in Mus. Berol.

Sporophila hypoxantha, Cab. Mus. Hein. i. p. 150; Burm. Syst. Ueb. iii. p. 249 (partim).

Spermophila hypoxantha, Pelz. Orn. Bras. p. 225.

Plumbea: alis caudaque nigricantibus fusco marginatis: speculo alari albo: uropygio et corpore subtus cinnamomeis: long. tota 3·7, alæ 2·1, caudæ 2·6. *Fem.* olivaceo-fusca; alis caudaque obscurioribus: subtus ochracea, ventre pallidiore.

Hab. Paraguay (*Azara*); Bolivia, Chiquitos (*D'Orb.*); S. Brazil, Curytiba (*Natt.*); Monte Video (*Mus. Berol.*).

The southern representative of *S. minuta* is a very closely allied species, to be distinguished mainly, if not entirely, by the clear plumbeous colour of the upper plumage, and the cinnamomeous tinge of the red below. In the latter character a Bogota skin of *S. minuta* is somewhat intermediate between the two forms. My pair of *S. hypoxantha* are Nattererian specimens collected at Curytiba in 1820. The Smithsonian collection contains a female obtained in Paraguay during Capt. Page's expedition.

3. SPERMOPHILA NIGRO-AURANTIA.

Bouvreuil de l'isle Bourbon, Buff. Pl. Enl. 204, fig. 1.

Loxia nigro-aurantia, Bodd.

Sperm. nigro-aurantia, Gray, Gen. p. 386.

Loxia aurantia, Gm. S. N. i. p. 853.

Pyrrhula pyrrhomelas, Vieill. Enc. Méth. p. 1027.

Pyrrhula capistrata, Vig. Zool. Journ. iii. p. 273.

Loxia brevirostris, Spix, Av. Bras. i. p. 47, pl. 49. f. 1, 2.

Spermophila rubiginosa, Sw. Class. ii. p. 294.

Spermophila pyrrhomelas, Gray, Gen. p. 386; Bp. Consp. p. 495.

Sporophila aurantia, Cab. Mus. Hein. p. 151; Burm. Syst. Ueb. iii. p. 250.

Spermophila aurantia, Scl. Cat. A. B. p. 104; Pelz. Orn. Bras. p. 226.

Loxia fraterculus, Cuv. in Mus. Par. (*partim*).

Cinnamomeo-rubra: pileo, alis et cauda nigris: speculo alari albo: long. tota 3·8, alæ 2·1, caudæ 1·2. *Fem.* fusca, alis caudaque nigricantibus: speculo alari albo: subtus dilutior.

Hab. Southern Brazil, Bahia (*Wucherer*), Rio (*Mus. P.L.S.*), S. Paulo, Araguay and Matto-dentro (*Natt.*).

This appears to be a common species in collections from Bahia and Rio. I have a pair from the latter locality; and in the Smithsonian collection are two males from Bahia, whence I have also seen many other skins. Natterer collected numerous examples of this *Spermophila* in various localities in the provinces of S. Paulo, Goyaz, and Matto-dentro. It was found feeding among the grasses in the campos and at the borders of the streams.

There are two mounted specimens in the Paris Museum marked as types of "*Loxia fraterculus*, Cuvier." One of them is of this species; the other belongs to *S. pileata*.

4. SPERMOPHILA PILEATA. (Plate I. fig. 3.)

Sporophila mitrata, Licht. Nomencl. p. 46 (descr. nulla).

Sporophila alaudina, Burm. Syst. Ueb. iii. p. 251.

Loxia fraterculus, Cuv. in Mus. Par. (partim).

Spermophila pileata, Sclater, P. Z. S. 1864, p. 607; Pelz. Orn. Bras. p. 226.

Lactescenti-alba, cinnamomeo vix tincta, interscapulio obscure variegato: pileo, alis et cauda nigris, his fusco marginatis: speculo alari albo: rostro nigro: long. tota 3·8, alæ 2·1, caudæ 1·2. *Fem.* olivaceo-fusca, alis caudaque obscurioribus: subtus ochracea, ventre pallidiore.

Hab. Brasil. merid., prov. S. Paulo (*Natt.*); Monte Video (*Mus. Berol.*)

This species only differs from the preceding in the cinnamon colour of the body being replaced by a pale milky white; but I am not aware of the existence of intermediate forms. Natterer obtained many specimens of it in various parts of the province of S. Paulo. In 1864 I described it from one of his skins, which is still the only specimen of this species in my collection. According to Burmeister it is the *Sp. mitrata* of Lichtenstein in Mus. Berol. But Burmeister is quite in error in referring it to *S. alaudina*, Lafr. et D'Orb., that name, as I have ascertained by reference to the types, having been bestowed upon immature examples of *S. telasco*.

5. SPERMOPHILA NIGRO-RUFA. (Plate I. figs. 1, 2.)

Pyrrhula nigro-rufa, Lafr. et D'Orb. Syn. Av. p. 87.

Sporophila nigro-rufa, Cab. Mus. Hein. p. 150.

Spermophila nigro-rufa, Gray, Gen. p. 386; Bp. Consp. i. p. 495; Pelz. Orn. Bras. p. 226.

Cinnamomeo-rufa; pileo, interscapulio, alis et cauda nigris, his fusco marginatis: speculo alari albo: rostro pallide corneo: long. tota 3·5, alæ 2·0, caudæ 1·5. *Fem.* Cineraceo-fusca, alis caudaque nigricantibus fusco limbatis: subtus pallide ochracea.

Hab. Bolivia, Chiquitos (*D'Orb.*); Brasil. merid., Mattogrosso (*Natt.*).

This bird is most like *S. nigro-aurantia,* but is at once recognizable by its black upper back. D'Orbigny obtained it in the Bolivian province of Chiquitos, and Natterer in the campos of Mattogrosso. My specimens are from Natterer's duplicates. I have compared them with D'Orbigny's types.

6. SPERMOPHILA TORQUEOLA.

Spermophila torqueola, Bp. Consp. p. 495; Sclater, P. Z. S. 1858, p. 303; et Cat. A. B. p. 105.

Sporophila ochropyga, Cab. Journ. f. Orn. 1861, p. 5.

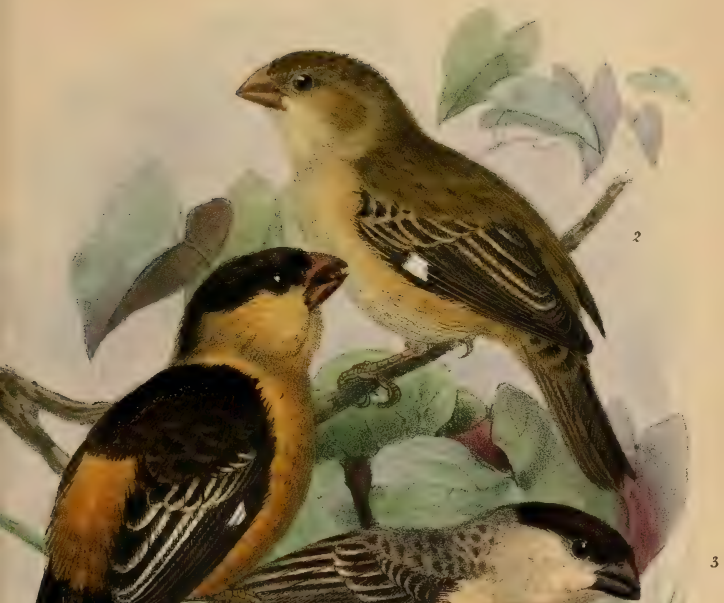
"*Spermophila atriceps,* Baird," Lawr. Ann. L. N. Y. viii. p. 479.

Nigra: plaga utrinque cervicali et speculo alari albis: dorso postico et corpore toto subtus pallide rufis; fascia subgutturali nigra: rostro corneo, pedibus fuscis: long. tota 3·5, alæ 2·2, caudæ 2·0. *Fem.* Fuscescenti-olivacea, alis caudaque obscurioribus: subtus valde dilutior, ochraceo perfusa.

Hab. Western Mexico, Oaxaca (*Boucard*), Mazatlan (*Xantus*), Tepic (*Grayson*).

This *Spermophila* was first shortly characterized by Bonaparte, in his 'Conspectus,' from a specimen stated to be in the Berlin Museum. This I have never seen; but I have compared my skins with a marked example in the French National Collection. From the Smithsonian and Mr. Lawrence I have received for examination the types of *S. atriceps* collected at Mazatlan and Tepic by Mr. Xantus and Col. Grayson. These

Ibis 1871. Pl. I



G. Keulemans lith. M & N Hanhart imp.

Fig. I SPERMOPHILA NIGRO-RUFA ♂.
2 — — ♀.
3 — PILEATA ♂.

I have no hesitation in regarding as immature males of *S. torqueola,* an adult of which was also obtained by Col. Grayson at Tepic. They differ only in the brown back; but one specimen in my collection is clearly intermediate; and I have another, still younger, specimen with the back brown, and the black on the head and chest-band only just appearing, which renders the series complete.

S. torqueola seems to be a *western* species. I have never seen it in collections from Vera Cruz and the eastern sea-board.

7. SPERMOPHILA CASTANEIVENTRIS.

Sporophila castaneiventris, Cab. in Schomb. Guian. iii. p. 679.

Spermophila castaneiventris, Bp. Consp. p. 495; Scl. et Salv. P. Z. S. 1866, p. 181, 1869, p. 597; Pelz. Orn. Bras. p. 225; Scl. Cat. A. B. p. 104.

Plumbea: alis caudaque nigricantibus; speculo alari albo: subtus paulo dilutior, medialiter omnino castanea: long. tota 3·6, alæ 2·0, caudæ 1·5. *Fem.* Fuscescenti-olivacea, alis caudaque nigricantibus: subtus dilutior, ochraceo perfusa.

Hab. Guiana (*Schomb.*); Rio Negro and Rio Madeira (*Natt.*); Eastern Peru, Lower Ucayali (*Bartlett*), Pebas (*Hauxwell*); New Granada, Bogota (*Lewy* in Mus. Paris).

8. SPERMOPHILA TELASCO.

Spermophila telasco, Less. Voy. Coq. Ois. p. 663, t. 16, fig. 2; Bp. Consp. i. p. 496; Scl. P. Z. S. 1869, p. 147; Gray, Gen. p. 386.

Sporophila telasco, Cat. Mus. Hein. i. p. 150.

Pyrrhula alaudina, Lafr. et D'Orb. Syn. Av. p. 83.

Spermophila alaudina, Bp. Consp. i. p. 496.

Fuscescenti-cinerea, fusco obsolete variegata; uropygio albicante: alis caudaque nigris ochraceo limbatis: speculo alari et remigibus ad basin albis: subtus alba, macula gulari castanea: long. tota 3·8, alæ 2·1, caudæ 1·6. *Fem.* mari similis sed macula gulari nulla.

Hab. Peruvia occ., Lima (*Nation*), Tacna (*D'Orb.*).

Mus. P. L. S. Smithson. (ex Lima, *Church*).

The only examples I possess of this species are those obtained near Lima by Prof. Nation, of which I have spoken P. Z. S. 1869, p. 147. There is a single specimen (female or young) in the Smithsonian collection from the same locality. On examining the types of *S. alaudina* in the Jardin des Plantes, I found that they were undistinguishable from the females and young of *S. telasco*, so that I regard these two names as synonyms.

The sixteen species of the black-and-white division of the *Spermophilæ* known to me may be arranged thus:—

Clavis *Spermophilinarum leucomelanarum.*

a. gutture albo: fascia pectorali nigra:
  a′. interscapulio cinereo .... 9. *albigularis.*
  b′. interscapulio nigro.
    a″. macula anteoculari alba .... 10. *collaria.*
    b″. macula anteoculari nulla.
      a‴. tectricibus alarum albo marginatis.
        torque collari perfecto .... 11. *moreleti.*
        torque collari imperfecto ...... 12. *lineata.*
      b‴. tectricibus alarum immarginatis .. 13. *ophthalmica.*
b. gutture nigro: fascia pectorali nigra .... 14. *cærulescens.*
c. gutture nigro; fascia pectorali nulla.
  a′. uropygio albo.
    pectore albo .... 15. *lineola.*
    pectore nigro, albo ocellato .... 16. *ocellata.*
  b′. uropygio nigro.
    macula cervicali utrinque alba .... 17. *aurita.*
    macula cervicali nulla .... 18. *luctuosa.*
  c′. uropygio olivaceo .... 19. *gutturalis.*
d. corpore toto subtus nigro...................... 20. *corvina.*
e. corpore toto subtus albo.
    corpore supra nigro .... 21. *bicolor.*
    corpore supra cinereo.................. 22. *hypoleuca.*
f. corpore subtus cinereo, ventre medio albo.
    rostro flavo .... 23. *grisea.*
    rostro nigro.......................... 24. *plumbea.*

9. SPERMOPHILA ALBIGULARIS.

Loxia albigularis, Spix, Av. Bras. i. p. 46, tab. 60. figs. 1, 2.

Spermophila albigularis, Gray, Gen. p. 386; Bp. Consp. i. p. 497.

Sporophila albigularis, Cab. Mus. Hein. i. p. 149; Burm. Syst. Ueb. iii. p. 243.

Cinerea: fronte, capitis lateribus, alis et cauda nigricantibus; speculo alari albo: subtus alba, torque pectorali nigro, lateribus cineraceo indutis: rostro rubro: long. tota 4·2, alæ 2·25, caudæ 1·75.

Hab. Brasil. mer. or., Bahia (*Wucherer*).

This is rather a scarce species, but is of occasional occurrence in collections from Bahia. The only skin in my possession was sent to me by Dr. Wucherer of that city.

10. SPERMOPHILA COLLARIA.

Loxia collaria, Linn. S. N. i. p. 305.

Spermophila collaria, Gray, Gen. B. p. 386.

Sporophila collaria, Burm. Syst. Ueb. iii. p. 246.

Gros-bec appellé la Nonette, Buff. Pl. Enl. 393. fig. 3, unde *Loxia cucullata,* Bodd.

Spermophila cucullata, Scl. Cat. A. B. p. 103; Pelz. Orn. Bras. p. 223.

Gros-bec d'Angola, Buff. Pl. Enl. 659, unde *Loxia collaris,* Bodd.

Loxia americana, Gm. S. N. i. p. 863.

Spermophila americana, Bp. Consp. i. 496.

Sporophila americana, Cab. in Schomb. Guian. iii. p. 678, et Mus. Hein. p. 150.

Loxia pectoralis, Lath. Ind. Orn. p. i. 390.

Fringilla pectoralis, Licht. Doubl. p. 26.

Sporophila pectoralis, Burm. Syst. Ueb. iii. p. 247.

Spermophila lafresnayi, Bp. Consp. i. p. 495 (♂ jr.).

Pico grueso cejete blanca, Azara, Apunt. i. p. 448.

Coccothraustes melanocephala, Vieill. N. D. xiii. p. 542, et Enc. Méth. p. 1013.

Spermophila melanocephala, Gray, Gen. p. 386; Hartl. Ind. Az. p. 9.

Pyrrhula melanocephala, Lafr. et D'Orb. Av. Syn. i. p. 85.

Fringilla atricapilla, Max. Beitr. iii. p. 569.

Spermophila atricapilla, Pelz. Orn. Bras. p. 223.

Cinerea: pileo, interscapulio, alis et cauda nigris; alis cinereo limbatis, speculo alari et macula utrinque anteoculari albis: subtus alba, interdum fulvo lavata; torque subgutturali nigro: rostro robusto corneo: long. tota 5·0, alæ 2·4, caudæ 2·2. *Fem.* fusca, alis et cauda nigricantibus: subtus pallide ochraceo-albicans.

Hab. Brit. Guiana (*Schomb.*); Wood region of S. E. Brazil (*Max.*); Rio Parana and Cuyaba (*Natt.*); Paraguay (*Az.*); Bolivia, Moxos and Guarayos (*D'Orb.*).

I have only been able to recognize one species under the various synonyms given above; but my series of specimens is not very large, and it is possible there may be two allied forms confounded under the present head. Herr v. Pelzeln (Orn. Bras. p. 223.) keeps *S. cucullata* and *S. atricapilla* distinct, remarking that the latter differs in the greater part of its body beneath being white, and perhaps in its rather larger size. I have one of Natterer's Cuyaba skins of the former species; and on comparing it with an example from Rio (which would certainly be *S. atricapilla* of Max.), I find that it is decidedly larger (not smaller), and has the belly suffused with fulvous. But the differences are not such as would induce me to separate the two birds specifically.

I have examined a marked specimen of *S. lafresnayi* of Bonaparte in the Paris Museum. It appears to me to be only a young male of the present species.

11. SPERMOPHILA MORELETI.

Spermophila moreleti, Bp. Consp. p. 497; Sclater, P. Z. S. 1856, p. 302, et 1859, pp. 365, 378, Cat. A. B. p. 105; Sclat. et Salv. Ibis, 1859, p. 17; Salvin, Ibis, 1859, p. 468, Cab. Mus. Hein. p. 150; Baird, B. N. Am. p. 506.

Sporophila moreleti, Cab. Journ. f. Orn. 1861, p. 4, Mus. Hein. i. p. 150.

Spermophila albogularis, Lawr. Ann. Lyc. N. Y. v. p. 124.

Supra nigra, uropygio speculo alari et tectricum alarium marginibus albis: subtus alba, torque jugulari nigro: rostro nigro: long. tota 3·8, alæ 2, caudæ 1·2. *Fem.* Olivacea, alis et cauda obscuris, tectricum marginibus rufescentibus: rostro pallido.

Hab. Texas (*Lawrence*); New Leon, Mexico (*Couch*); Southern Mexico (*Sallé* et *Botteri*); Guatemala (*Salvin*); Honduras (*Whitely*).

12. SPERMOPHILA LINEATA.

Loxia lineata, Gm. S. N. i. p. 858.

Sporophila lineata, Burm. Syst. Ueb. iii. p. 245.

Spermophila lineata, Sclater, Cat. A. B. p. 104.

Loxia leucopterygia, Spix, Av. Bras. i. p. 45, pl. 58. f. 3.

Pico grueso negro y blanco, Azara, Apunt. i. p. 458.

Pyrrhula leucoptera, Vieill. Enc. Méth. p. 998.

Spermophila leucopterygia, Gray, Gen. p. 386; Bp. Consp. p. 496.

Pyrrhula misya, Vieill. Ois. Chant. p. 75, t. 46.

Spermophila mysia, Bp. Consp. p. 496; Scl. Cat. A. B. p. 104.

Supra nigra: uropygio, speculo alari et tectricum marginibus albis: subtus alba, torque pectorali imperfecto nigro: rostro nigro: long. tota 4·5, alæ 2·4, caudæ 2·0. *Fem.* Brunnescenti-olivacea, alis et cauda obscurioribus; subtus dilutior, ventre ochracescente.

Hab. Guiana et Cayenne (*Mus. P. L. S.*); Para (*Wallace*).

In my 'Catalogue' I have kept *S. lineata* and *S. mysia* distinct, but, upon reexamination, find the individuals which I referred to those two supposed species inseparable; and I believe the two terms to be synonymous. Spix's figure of *Pyrrhula leucopterygia* evidently represents the same species.

I have followed other authors in referring Azara's *Pico grueso negro y blanco* (unde *Pyrrh. leucoptera,* Vieill.) to this species; but I have not yet met with specimens of it from anywhere near Azara's locality, and am rather uncertain whether his description may not refer to some other bird.

13. SPERMOPHILA OPHTHALMICA.

Spermophila ophthalmica, Sclater, P. Z. S. 1860, pp. 276, 293, et Cat. A. B. p. 103.

Nigra: uropygio, speculo alari et puncto suboculari albis: subtus alba, torque subgutturali angusto nigro: rostro nigro: long. tota 4·2, alæ 2·2, caudæ 1·7. *Fem.* Murino-brunnea, alis caudaque obscuris, colore dorsi marginatis: subtus ochraceo-albescens, ventre imo puriore.

Hab. Reipubl. Æquator. reg. occident., Esmeraldas et Babahoyo (*Fraser*), Guayaquil (*Mus. Smithson.*).

Obs. Proxima *Sp. lineatæ,* sed torque jugulari perfecto, alarum tectricibus omnino nigris, et crassitie minore distinguenda.

I am a little doubtful about this species, which, upon comparison of a larger series, may be found to be scarcely separable from the preceding. Besides Fraser's skins, upon which this *Spermophila* was originally established, I have before me a skin from Guayaquil, belonging to the Smithsonian Institution, which agrees exactly with the types.

14. SPERMOPHILA CÆRULESCENS.

Pyrrhula cærulescens, Vieill. E. M. p. 1023.

Spermophila cærulescens, Gray, Gen. p. 386; Bp. Consp. p. 498; Sclater, Cat. A. B. p. 104.

Pyrrhula nigricollis, Vieill. E. M. p. 1027.

Sperm. nigricollis, Bp. Consp. i. p. 498; Scl. Cat. A. B. p. 104.

Pico grueso gargantilla, Az. Apunt. i. p. 452, no. 125.

Fringilla leucopogon, Max. Beitr. iii. p. 572.

Fringilla ornata, Licht. p. 26.

Pyrrhula ornata, Lafr. et D'Orb. Syn. Av. p. 86.

Spermophila ornata, Hartl. Ind. Az. p. 9; Bp. Consp. i. p. 497; Scl. et Salv. P. Z. S. 1869, p. 632; Pelz. Orn. Bras. p. 224.

Sporophila ornata, Cab. Mus. Hein. p. 149; Burm. Syst. Ueb. iii. p. 243.

Spermophila nigrigularis, Gould, Zool. Voy. Beagle, iii. p. 88.

Supra cinerea, pileo præcipue ad frontem nigricante: subtus alba, gula media utrinque albo marginata et torque jugulari nigris: rostro pallide flavo: long. tota, 4·5, alæ 2·3, caudæ 2. *Fem.* Olivacea, alis caudaque obscuris, olivaceo limbatis: subtus valde dilutior, ochraceo perfusa, gula et ventre medio albicantibus.

Hab. Brazil, Matto-dentro, San Paulo and Mattogrosso (*Natt.*), environs of Rio, very common (*Burm.*), Minas Geraes (*Burm.*), Paraguay (*Azara*); Bolivia (*D'Orb.*); Buenos Ayres (*Hudson*).

The two skins referred in my catalogue to *S. cærulescens* and *S. nigricollis* are certainly identical. I have lately also examined the types of these two species (*Pyrrhula cærulescens* and *P. nigricollis* of Vieillot), which are still in the Paris Museum. *Pyrrhula cærulescens* is quite identical with the ordinary Brazilian form of this bird. The type of *P. nigricollis* differs a little, particularly in having a slight yellowish tinge on the belly, but is, I fully believe, merely a not quite mature individual of the same species.

The specimens of this bird which I have seen from Buenos Ayres (*S. nigrigularis*, Gould = *S. ornata*, Scl. et Salv. P. Z. S. 1869, p. 632) have the head not quite so black as in most Brazilian skins, and the back slightly suffused with olivaceous. When first met with in Mr. Hudson's series, their identity with the Brazilian form was not recognized.

Natterer collected a large series of this *Spermophila* in various parts of S. Paulo, Rio, and Mattogrosso, whence it extends into Bolivia and the Argentine Republic, but does not appear to go further north.

15. SPERMOPHILA LINEOLA.

Loxia lineola, Linn. S. N. i. p. 304.

Pyrrhula crispa, Vieill. Ois. Chant. p. 76, pl. 47.

Spermophila lineola, Bp. Consp. p. 497; Pelz. Orn. Bras. p. 224; Scl. et Salv. P. Z. S. 1869, p. 252; Scl. Cat. A. B. p. 104.

Pyrrhula lineola, Lafr. et D'Orb. Syn. Av. p. 86.

P. bouvronides, Less. Tr. d'Orn. p. 450.

Spermophila bouvronides, Bp. Consp. i. p. 497; et Scl. Cat. A. B. p. 104.

Sporophila lineola, Cab. Mus. Hein. p. 150; Burm. Syst. Ueb. iii. p. 248.

Sericeo-nigra, uropygio, speculo alari et (interdum) striga verticali albis: subtus alba, gutture nigro, albo utrinque marginata: rostro nigro: long. tota 4·0, alæ 2·3, caudæ 1·8. *Fem.* Olivaceo-fusca, alis et cauda obscuris, dorsi colore limbatis: subtus ochracea, abdomine medio albicante.

Hab. Cayenne (*Mus. P. L. S.*); Rio Negro (*Natt.*); E. Peru, Pebas (*Cast. et Dev.*); Venezuela (*Goering*); Trinidad (*P. L. S.*);

Bolivia, Chiquitos et Guarayos (*D'Orb.*); Mattogrosso (*Natt.*); S. E. Brazil, Bahia (*Wucherer*); Paraguay (*Mus. Smiths.*).

In my 'Catalogue' I followed Bonaparte in keeping *S. bouvronides* distinct from the present species, on account of the absence of the vertical stripe. This, however, seems to be an accidental variation*. In one skin from Trinidad before me it is not present; in a second it is only just apparent. In a third from Venezuela it is well developed. A skin in the Smithsonian collection, from the Parana (Rio Vermejo), agrees very well with ordinary Cayenne specimens, showing that this species has a wide distribution.

16. Spermophila ocellata. (Pl. II. fig. 3.)

Spermophila ocellata, Sclater et Salv. P. Z. S. 1866, p, 181; et P. Z. S. 1869, p. 253.

Sericeo-nigra: uropygio speculo alari et (interdum) striga verticali albis: subtus alba; gutture nigro utrinque albo marginato: pectore nigro, albo ocellato: long. tota 4·0, alæ 2·3, caudæ 1·8. *Fem.* Olivaceo-fusca, alis caudaque obscuris, dorsi colore limbatis: subtus ochracea, ventre albicante; rostro pallido.

Hab. Amazonia superior, Nauta (*Bartlett*); Venezuela, prope lacum de Valencia (*Goering*).

Obs.—Forsan *Sp. lineolæ* mera varietas, sed pectore ocellato primo visu sane diversa.

17. Spermophila aurita. (Plate II. figs. 1 and 2.)

Spermophila aurita, Bp. Consp. i. p. 495 (1850); Lawr. Ann. L. N. Y. vii. p. 333.

Spermophila semicollaris, Lawr. Ann. L. N. Y. viii. p. 10; Scl. et Salv. P. Z. S. 1864, p. 352; Salvin, P. Z. S. 1870, p. 189.

Spermophila hicksii, Lawr. Ann. L. N. Y. viii. p. 170.

Spermophila fortipes, Lawr. Ann. L. N. Y. viii. p. 171.

Spermophila collaris, Lawr. Ann. L. N. Y. viii. p. 176.

Sporophila hoffmanni, Cab. Journ. f. O. 1861, p. 506.

Nigra: speculo alari, plaga utrinque cervicali (interdum semitorquem formante) et ventre medio albis: rostro nigro: long. tota 4·0, alæ 2·1, caudæ 1·8. *Fem.* Olivacea, alis cau-

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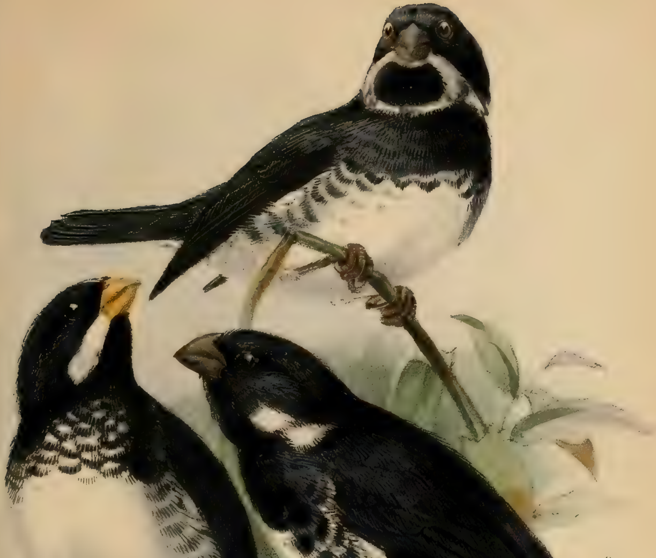
* *Cf.* v. Pelzeln, Orn. Bras. p. 224.



J. G. Keulemans lith.

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daque obscurioribus, dorsi colore limbatis: subtus dilutior, flavicans, tectricibus subalaribus albis.

Hab. Panama (*M'Cleannan*); western coast of New Granada, Buenaventura (*Hicks*); Veragua (*Arcé*); Costa Rica (*Hoffmann*).

I have nine males and three females of this bird before me, amongst which are the types of *S. semicollaris, S. hicksii, S. fortipes,* and *S. collaris* of Mr. Lawrence. I have likewise examined a large series from Panama and Chiriqui in the collection of Salvin and Godman. There is much variation in the amount of the white on the throat and neck collar; but I am unable to distinguish more than one species amongst them all. This must bear Bonaparte's name *aurita,* as the typical example of *S. aurita* in Mus. Paris clearly belongs to it, though the locality (Brazil) attributed to it in the 'Conspectus' is no doubt erroneous.

It is difficult to distinguish the female of this species from the corresponding sex of *S. corvina.*

18. SPERMOPHILA LUCTUOSA.

Spermophila luctuosa, Lafr. Rev. Zool. 1843, p. 291; Gray, Gen. p. 386; Bp. Consp. p. 497; Sclater, P. Z. S. 1855, p. 160, et 1858, pp. 72, 455; ej. Cat. A. B. p. 105; Scl. et Salv. P. Z. S. 1869, p. 597.

Sporophila luctuosa, Tsch. Faun. Per. p. 221; Cab. Mus. Hein. p. 150.

Nigra: speculo magno alari et abdomine medio albis: rostro pallide flavo: pedibus nigris: long. tota 3·8, alæ 2·2, caudæ 1·5. *Fem.* Fuscescenti-olivacea, alis caudaque nigris dorsi colore limbatis; subtus valde dilutior; ventre medio albicante, rostro-plumbeo.

Hab. Nov. Granada int., Bogota (*Mus. P. L. S.*); Reipubl. Æquator. reg. oriental. ad fl. Napo (*Mus. Smiths.*); Peruvia orient. Cosnipata (*Whitely*).

19. SPERMOPHILA GUTTURALIS.

Fringilla gutturalis, Licht. Doubl. p. 26.

Fringilla melanocephala, Max. Beitr. iii. p. 577.

Loxia plebeia, Spix, Av. Bras. ii. p. 46, pl. 60. f. 3.

Phonipara gutturalis, Bp. Consp. p. 494; Lawr. Ann. L. N. Y. vii. p. 298.

Spermophila gutturalis, Sclater, P. Z. S. 1855, p. 160, et 1860, p. 293; Scl. et Salv. P. Z. S. 1864, p. 352; Pelz. Orn. Bras. p. 225; Sclat. Cat. A. B. p. 105.

Sporophila gutturalis, Cab. Mus. Hein. p. 149; Burm. Syst. Ueb. iii. p. 244.

Spermophila olivaceo-flava, Lafr. Rev. Zool. 1843, p. 291, et 1846, p. 207; Scl. P. Z. S. 1855, p. 160.

Olivacea: pileo antico, capitis lateribus et gutture toto ad medium pectus nigris: abdomine et tectricibus subalaribus flavicantibus: rostro pallide flavo: long. tota 4·3, alæ 2·25, caudæ 1·8. *Fem.* Olivacea, capite concolori: subtus dilutior, abdomine et subalaribus flavicantibus.

Hab. Brasil. merid. Rio (*Burm.*); Goyaz et Cuyaba (*Natt.*); Rio Negro (*Natt.*); Bogota (*Lafr.*); Western Ecuador (*Fraser*); Panama (*M'Cleannan*).

This *Spermophila* has a wide range in South America. I cannot distinguish skins from Panama, Western Ecuador, Bogota, Para, and Rio now before me. Natterer, as will be seen from my list of localities, met with it still further south.

20. SPERMOPHILA CORVINA.

Spermophila corvina, Sclater, P. Z. S. 1859, p. 379, et Cat. A. B. p. 105; Sclat. et Salv. Ibis, 1860, p. 33; Law. Ann. L. N. Y. viii. p. 179.

Spermophila badiiventris, Lawr. Ann. L. N. Y. viii. p. 171; Baird, Trans. Acad. Chicago, i. p. 319, t. xxviii. fig. 3.

Nigra unicolor: speculo alari et subalaribus albis: rostro et pedibus nigris: long. tota 4·2, alæ 2·2, caudæ 1·11. *Fem.* Saturate olivacea, alis caudaque obscuris, dorsi colore limbatis: subtus dilutior, paullum flavescens, subalaribus albis.

Hab. Mexico merid., Oaxaca (*Boucard*); Guatemala (*Salvin*); Honduras (*Whitely*); Nicaragua (*Kennicott*); Costa Rica (*Carmiol et Arcé*); Panama (*M'Cleannan*).

This seems to be a common species throughout Central America from Southern Mexico to Panama. I have always expected to find an earlier name for it than my own, but have not yet succeeded in doing so.

Prof. Baird has most kindly sent me the type of *S. badiiventris* for examination; but I am unable to see in this specimen anything more than a slight variety of the present species. Some of the feathers of the belly are narrowly edged with ferruginous; but this may be only a remnant of the immature plumage.

21. Spermophila bicolor.

Pyrrhula bicolor, Lafr. et D'Orb. Syn. Av. i. p. 86; D'Orb. Voy. Ois. t. 50. f. 1.

Spermophila bicolor, Gray, Gen. p. 386.

Sporophila bicolor, Bp. Consp. p. 499; Scl. Cat. A. B. p. 103.

Nigra, speculo alari albo: subtus alba: rostro robusto, rubro: long. tota 5·3, alæ 2·5, caudæ 2·2. *Fem.* Fusca, alis caudaque obscurioribus: subtus alba, subrufescens.

Hab. Bolivia, Moxos (*D'Orb.*).

Mus. Paris.

This is rather a rare species. Besides the five specimens in the Paris Museum (all obtained by D'Orbigny), I have only seen two. These are both males, in my own collection. The diagnosis of the female is from one of D'Orbigny's examples.

22. Spermophila hypoleuca.

Fringilla hypoleuca, Licht. Doubl. p. 26.

Spermophila hypoleuca, Bp. Consp. i. p. 497; Scl. Cat. A. B. p. 103; Pelz. Orn. Bras. p. 223.

Sporophila hypoleuca, Cab. Mus. Hein. p. 149; Burm. Syst. Ueb. iii. p. 241.

Pyrrhulea cinereola, Temm. Pl. Col. 11. f. 1.

Fringilla rufirostris, Max. Beitr. iii. p. 581.

Cinerea; speculo alari albo; subtus alba: rostro robusto, rubro: long. tota 4·5, alæ 2·3, caudæ 2·0. *Fem.* Fusca, alis caudaque obscurioribus: subtus subrufescens, medialiter dilutior: rostro corneo.

Hab. S.E. Brazil, Campos (*Burm.*); Bahia (*Wucherer*); S. Paulo, Goyaz et Cuyaba (*Natt.*).

This Finch is by no means uncommon in collections from Bahia, and appears to be widely diffused in South-eastern Brazil. Temminck's figure (Pl. Col. 11. f. 1) certainly represents this species; but Bonaparte's diagnosis of *Sporophila cinereola* (Consp. p. 499) seems to have been intended for *S. grisea.*

23. Spermophila grisea.

Gros-bec de Virginie, Buff. Pl. Enl. 393. fig. 1.
Loxia grisea, Gm. S. N. p. 857.
Spermophila grisea, G. R. Gray, Gen. of B. p. 386.
Sporophila intermedia, Cab. Mus. Hein. p. 149.
Spermophila intermedia, Sclater, Cat. Am. B. p. 103.
Sporophila cinereola, Bp. Consp. i. p. 499,
Spermophila cinerea, Lawrence, Ann. L. N. Y. vii. p. 474.
Spermophila schistacea, Lawrence, ibid. viii. p. 10.

Hab. Cayenne (*Mus. P. L. S.*); Venezuela (*Cab.*); Trinidad (*Mus. G. N. L.*); Bogota (*Mus. P. L. S.*); Panama (*Mc Leannan*); Chiriqui (*Arcé*).

Obscure grisea, speculo alari (interdum vix distinguendo) albo: subtus dilutior, pectore medio cum ventre et crisso albis: rostro flavo: long. tota 4·0, alæ 2·5, caudæ 1·6. *Fem.* Fuscescenti-olivacea, subtus dilutior: ventre medio albicante: rostro corneo.

In my 'Catalogue' I have called this bird *Spermophila intermedia,* following Cabanis. I am now of opinion that it is the bird represented in the 'Pl. Enl.' as the *Gros-bec de Virginie* (Pl. Enl. 393. fig. 1), and that it should therefore be called *Spermophila grisea* (ex *Loxia grisea,* Gm.), a very appropriate name for it. Buffon has in several other instances given Virginia as a locality for species which are really from Cayenne; and there is no other American bird, so far as I am aware, with which his figure and description agree so nearly.

I have six skins of this *Spermophila* in my collection, from Cayenne, Venezuela, Bogota, and Chiriqui. Mr. Lawrence has kindly lent me two others from Trinidad and Panama, the latter being typical of his *S. schistacea* (olim *S. cinerea*). In Mr. Lawrence's Panama skin there is a small whitish patch on each side of the throat, and this is also slightly apparent in my Veragua skin, but not in those before me from other localities. This, however, is in my opinion much too feeble a character to warrant the specific distinction of birds which otherwise agree with one another.

24. Spermophila plumbea.

Fringilla plumbea, Max. Beitr. iii. p. 579.

Sporophila plumbea, Cab. Mus. Hein. p. 149; Burm. Syst. Ueb. iii. p. 242.

Spermophila plumbea, Pelz. Orn. Bras. p. 223; Scl. Cat. A. B. p. 103.

Pyrrhula vetula, Natt. M.S.

Spermophila cinerea, Lafr. et D'Orb. Syn. Av. p. 85; Gray, Gen. p. 386.

Plumbea, alis caudaque nigricantibus: speculo alari et rectricum fascia basali albis: rostro nigro: subtus valde dilutior, ventre albo: long. tota 4·0, alæ 2·5, caudæ 7·0. *Fem.* cineraceo-olivacea, alis et cauda nigricantibus: subtus albida, ochraceo induta: rostro corneo.

Hab. Brasil. prov. S. Paolo et Matto-grosso (*Natt.*); Bolivia (*D'Orb.*); Nov. Granada int. (*Mus. S.-G.*); Cayenne (*Mus. G. N. L.*).

I have a pair of Nattererian skins of this species from Ytarare (S. Paulo). The male agrees very well with a Bogota skin in Salvin and Godman's collection, and one from Cayenne belonging to Mr. Lawence.

S. plumbea may be at once distinguished from the preceding species by its black bill, and more nearly uniform and whiter colour below.

II. *Remarks on other described species of* Spermophila, *not known to the author.*

Although, as it will be seen by the preceding synopsis, I have succeeded in reducing the number of supposed *Spermophilæ* not inconsiderably, there remains a rather formidable residuum of described species, which I have not been able to identify. Some of them, such as those recently characterized by Herr v. Pelzeln, are no doubt authentic; but most of the others are probably synonyms of some of the twenty-four species already spoken of.

1. SPERMOPHILA CABOCLINHO.

Spermophila caboclinho, Pelz. Orn. Bras. p. 224 et p. 331.

"Mas jr. et fem. coloribus fem. *Sp. ornatæ* similes, sed remigum basi latius alba et tectricibus alarum nigris colore dorsi limbatis."

Hab. Rio (*Natt.*).

2. SPERMOPHILA CINNAMOMEA.

Pyrrhula cinnamomea, Lafr. Rev. Zool. 1819, p. 99.

Sporophila cinnamomea, Cab. Mus. Hein. p. 150.

Spermophila cinnamomea, Pelz. Orn. Bras. p. 226; G. R. Gray, G. of B. ii. p. 386.

Similis *Sp. minuto,* sed omnino brunneo-cinnamomea, pileo cinereo: remigibus rectricibusque nigricantibus griseo marginatis, speculo alari albo (*Bp.*).

Hab. Rio Grande (*Lafr.*): Rio Araguay (*Natt.*).

3. SPERMOPHILA FALCIROSTRIS.

Pyrrhula falcirostris, Temm. Pl. Col. ii. fig. 1.

Fringilla falcirostris, Max. Beitr. iii. p. 584.

Spermophila falcirostris, Gray, Gen. ii. p. 386.

Sporophila olivascens, Licht. Nomencl. p. 45 (?).

Hab. Wood-region near Bahia (*Burm.*).

This would appear to be the female of a species allied to *S. hypoleuca*; but I have never met with a specimen of it.

4. SPERMOPHILA FLABELLUM.

Le queue en éventail, Buff. Pl. Enl. 380.

Loxia flabellum, Bodd.

Spermophila flabellum, Gray, Gen. ii. p. 386.

Loxia flabellifera, Gm. S. N. p. 850.

Sporophila flabellifera, Bp. Consp. i. 499; Burm. Syst. Ueb. iii. p. 249.

I can make no suggestion as to what Buffon's figures, upon which this species was established, were intended for.

5. SPERMOPHILA INORNATA.

Pyrrhula inornata, Vig. Zool. Beechey's Voy. p. 83.

Spermophila inornata, Gray, Gen. p. 486.

This may be a female *Spermophila* or *Guiraca*; but without examination of the type (which has disappeared) it would be impossible to determine the species. No locality is given.

6. SPERMOPHILA LEUCOPSIS.

Spermophila leucopsis, Cab. J. f. O. 1861, p. 506.

Ex patria ignota, cum *Sp. moreleti* plerumque congruit, sed omnino grandior esse dicitur et rostro præsertim majore gaudet. Specimen unicum in Museo Berolinensi.

7. SPERMOPHILA MELANOPS.

Spermophila melanops, Pelz. Orn. Bras. pp. 225 et 331.

"Capite, nucha, regione auriculari et gula circumscripte nigris, notæo flavescente cinereo-fusco : gastræo brunnescente albo, hypochondriis ochraceo lavatis : remigibus albo notatis : long. tota 45."

Hab. Porto do Rio Araguay (*Natt.*).

Obs. Ad *Sp. cærulescentem* proxime accedit.

8. SPERMOPHILA MELANOGASTER.

Spermophila melanogaster, Pelz. Orn. Bras. pp. 225 et 332.

"Corpore supra et lateribus colli, pectoris et abdominis cinereis, uropygio parum clariore : gastræo a gula inde, exceptis plumis analibus et tibiarum albescentibus, nigro; long. tota 4·3.

Hab. Prov. S. Paulo, Brazil.

9. SPERMOPHILA RUFICOLLIS.

Fringilla ruficollis, Licht. in Mus. Berol.

Sporophila ruficollis, Cab. Mus. Hein. i. p. 150.

Spermophila ruficollis, Pelz. Orn. Bras. p. 225.

Hab. Monte Video (*Mus. Berol.*) ; Mattogrosso (*Natt.*).

Aff. *S. hypoxanthæ,* et hujus sp. forsan avis junior : sed ab ave adulta pectore inferiore et ventre albescentibus rufescente tinctis diversa.

10. SPERMOPHILA RUFIROSTRIS.

Sporophila rufirostris, Landb. J. f. O. 1865, p. 404.

This species, which Herr Landbeck met with eastward of the Portillo pass, on the road from Santiago to Mendoza, would appear to belong to the section embracing *S. grisea* and *S. plumbea.* It is described as being generally of a dark lead-grey colour, with darker centres to the feathers on the head and back, lower belly whitish, and crissum rufescent. Total length 5½ in.

11. SPERMOPHILA SUPERCILIARIS.

Spermophila superciliaris, Pelz. Orn. Bras. pp. 223, 330.

Supra brunnescenti-olivacea: pileo, loris et stria malari nigris: superciliis et spatio inter striam malarem et genas albis.

Hab. Matto-dentro, Brazil (*Natt.*).

III. *Remarks on the geographical distribution of the* Spermophilæ.

The genus *Spermophila* is one of the characteristic Fringilline forms of the Neotropical Region, being entirely deficient in other parts of the world. It may, however, perhaps, somewhat transgress the limits of the Neotropical Region towards the north, one species having been met with within the confines of the great American Republic. Moreover it does not occupy quite the whole of the Neotropical Region, being, as is the case with many other peculiar Neotropical genera, unrepresented in the Antillean and Patagonian subregions. In the other Neotropical subregions it is distributed as follows.

1. *Isthmian Subregion.*

In Mexico and Guatemala and down to Honduras only three species of *Spermophila* are known to occur—namely, *S. moreleti*, *S. torqueola*, and *S. corvina*. Further south *S. aurita* comes in, and seems to be abundant in Costa Rica, Veragua, and Panama. On the isthmus of Panama *S. minuta*, *S. gutturalis*, and *S. grisea* likewise occur, coming up from the south so far. *S. grisea* advances as far north as Chiriqui.

2. *Columbian Subregion.*

In Bogota collections, by which this subregion is best known, *S. minuta*, *S. luctuosa*, and *S. grisea* seem to be of most ordinary occurrence; but I have likewise seen skins of *S. castaneiventris*, *S. gutturalis*, and *S. plumbea*.

In Western Ecuador and Peru *S. ophthalmica* (a very close representative of *S. lineata*), *S. gutturalis*, and *S. telasco* are the only species I am acquainted with. But *S. luctuosa* is met with all along the eastern slope of the great range, at least as far south as the neighbourhood of Cuzco, where Mr. Whitely has lately obtained specimens of it.

In Venezuela the representatives of this genus are *S. minuta, S. lineola,* its near ally *S. ocellata,* and *S. grisea.*

3. *Amazonian Subregion.*

In Guiana and Cayenne the ordinary species of *Spermophila* are *S. minuta, S. castaneiventris, S. lineola,* and *S. grisea.* I have likewise seen Cayenne skins of *S. plumbea*; and *S. collaria* is stated to occur in British Guiana.

On the Upper Amazon *S. castaneiventris, S. lineola,* and *S. ocellata* represent the genus. From Para I have only seen *S. lineata.*

4. *Brazilian Subregion.*

The commonest species of *Spermophila* in the numerous collections brought from the wood-region of S. E. Brazil are *S. nigro-aurantia, S. collaria, S. cærulescens, S. gutturalis,* and *S. hypoleuca. S. albigularis* seems to be rather local, but occasionally occurs in collections from Bahia. Further south, in San Paulo and the adjacent provinces, Natterer got also *S. hypoxantha, S. pileata,* and other species not known to me, and in Mattogrosso *S. nigro-rufa.*

In the vicinity of Buenos Ayres *S. cærulescens* (or the pale variety of it, called *S. nigrigularis* by Gould) seems to be the only species; but *S. lineola* and *S. hypoxantha* likewise occur in Paraguay.

In Bolivia D'Orbigny obtained examples of *S. hypoxantha, S. nigro-rufa, S. collaria, S. cærulescens, S. lineola, S. bicolor,* and *S. plumbea.* Of these, *S. hypoxantha, S. nigro-rufa,* and *S. cærulescens* belong to the Brazilian subfauna, while *S. lineola, S. collaria,* and *S. plumbea* are birds of wide distribution. But *S. bicolor,* so far as is hitherto recorded, seems to have only been met with in the Bolivian province of Moxos, and is therefore more strictly an Amazonian species.

II.—*Stray Notes on Ornithology in India.* By ALLAN HUME, C.B.

No. VI. *On certain new or unrecorded Birds.*

IN a letter, which appeared at page 355 of 'The Ibis' for July 1869, I mentioned having submitted for examination to M.

Jules Verreaux a small box of bird-skins containing, as I considered, numerous species, either altogether new, or new to our Indian avifauna.

I gave names at the time to several of these species, but was well aware that they would hardly be accepted as undoubted additions to our avifauna until, due comparison having been made in European museums, my views received the confirmation of European ornithologists.

This necessary comparison has now been made at the Museum of the Jardin des Plantes, by M. Verreaux, aided in some instances by M. Gerbe; and I now hasten to give a brief summary of its results.

†† 9 bis*. Falco atriceps, nobis.

("Rough notes," part. i. p. 58.)

No satisfactory conclusion seems to me to have yet been come to with regard to this species. Dr. Jerdon, who has seen nearly a hundred specimens of *F. peregrinator*, dead and alive, is positive that it is not that species. I myself have now had an opportunity of examining numerous specimens of this species in many different stages of plumage, and agree with Dr. Jerdon. M. Verreaux remarks—"I have most carefully compared your Falcon with all those known to me; and my first idea that it was *F. melanogenys* of Gould appears to have been correct. In Australia I myself have killed several specimens similar to yours; and you may therefore feel certain that this latter is really an example of *F. melanogenys*." Per contra, *F. melanogenys* from Australia, of which I now possess two specimens, male and female, appears to be a considerably larger bird; moreover my friend Major Delmé-Radcliffe, who has kept both *F. melanogenys* and *F. atriceps* alive, and who has probably paid more attention to live Falcons than any one now living, positively affirms that *F. melanogenys* is a decidedly larger bird. In his opinion, *F. atriceps* is a mere modification of *F. peregrinator*, not deserving specific separation. On the whole, it appears to me, with more examples before me than I formerly had, that *Falco atriceps* is a good species.

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* The numbers are those of Dr. Jerdon's work. Where the bird was not included by him, I have given it as *bis* or *ter* of the number of that species which it appeared to follow most conveniently. I have prefixed †† to those species which I consider altogether new, and † to those the occurrence of which in India I have been, I believe, the first to establish.

†† 24 bis. ACCIPITER MELASCHISTUS, nobis.
("Rough Notes," part i. p. 128.)

I sent an adult female and a young male of this species to M. Verreaux, who remarks, "I have compared these two Accipiters with all those I could find either in our Museum or elsewhere, and I must tell you that I believe the species to be new. No doubt the female, in some respects, presents a striking resemblance to certain specimens of our *Accipiter nisus*; but there are still, it seems to me, differences sufficient to warrant a separation. As to the young male, it differs widely from the young of our common species. What strikes me as the most conspicuous difference is the comparative shortness of the tarsi. I think, therefore, you may fairly describe the species as new."

44 bis. BUTEO DESERTORUM.

45. BUTEO FEROX.

The different species of Buzzards inhabiting the Old World certainly require careful reconsideration. I hope that my remarks in Part ii. of my "Rough Notes" will throw some light upon the subject. In the meantime, to refer to the specimens sent to M. Verreaux, which were three in number. One from the Punjab, of a very deep smoky brown colour, mingled beneath on the throat and breast with dull rufous, and having on the tail seven conspicuous, well-defined, transverse white bars. This I believed at the time to be new, and designated *B. fuliginosus**. The other two, from the Himalayas, belonged to the species usually identified with *B. vulgaris*; but from this I felt convinced they differed materially. Alluding to the first, M. Verreaux says, "Your Buzzard appears to me to be new." Mr. Gurney also, who saw this same specimen in Paris, remarks (*in epist.*) that it appears to him to be new to science.

[* This name has already been used for a Mexican and Guatemalan Buzzard. *Cf.* Scl. Trans. Z. S. iv. p. 267, pl. 62.—ED.]

Since sending home this specimen, I have procured numerous others; and I now entertain no doubt that (as pointed out in Part ii. of my "Rough notes") this smoky-coloured, white-barred-tailed Buzzard is a stage of *B. ferox*. As regards the other two Buzzards, M. Verreaux remarks, "I have great difficulty in not considering all your three specimens as belonging to one and the same species, notwithstanding the differences in plumage and in the extent to which the tarsi are feathered. Differences in this latter respect are also often noticeable in our common Buzzard of France. At any rate, one thing seems to me certain, that the lighter of the two birds is the adult, and the darker the young one. I enclose a note, prepared by one of my friends in regard to various differences which exist between your specimens and numerous specimens procured at certain seasons of the year on the Bosphorus by M. Alléon."

He adds, "Possibly the lighter-coloured of the three specimens may be merely a stage of *Buteo ferox*." My own conviction now is that this lighter-coloured specimen is one stage of *Buteo desertorum*; but I am bound to remark that as my already large series of both these supposed species (*B. ferox* and *B. desertorum*) increases, I am more and more inclined to suspect, not that they are identical (typical examples of each differ most conspicuously), but that intermediate forms occur, and that in some parts of Asia they either interbreed or else have never become truly distinct.

80. GLAUCIDIUM BRODIEI.

I sent to Paris what I considered to be a new species of Pigmy Owl. M. Verreaux decides that it is only an *old* bird of the above species. It is remarkable for having the whole head, nape, back, and scapulars entirely spotless brown, thus presenting a totally different appearance from the specimens commonly met with.

† 99 bis. BUTALIS GRISOLA, Linn.

This is another addition to our avifauna; I obtained a specimen from Jodhpoor in a collection kindly sent me by Dr. King. I at once noticed that it was new to us in India, but felt much puzzled where to place it. M. Verreaux remarks of the specimen sent him, "This is *Butalis grisola*, a very common species in Europe, Asia, and Africa. Blyth indicates it in his Catalogue of the Calcutta Museum, page 75. I received it many years ago from India, and always considered it identical with the European species." With reference to the above, it is necessary to point out that the specimens noted in Blyth's Catalogue were obtained from England, and that neither Mr. Blyth, Dr. Jerdon, nor, so far as I know, any other of our Indian ornithologists were aware of its occurrence in India.

323. ERYTHROSTERNA LEUCURA.

I sent a male and female of the bird usually referred to this species, which occurs throughout Upper and Central India. Having compared them with European specimens which I possess, and also with Gould's and Bree's figures, I concluded that they were the true *E. parva*, while I considered the eastern race which I have received from Tipperah, and which appeared to me to present certain slight differences, to be the *E. leucura* of Gmelin, Latham, and Blyth. M. Verreaux, however, says in regard to the male, "After all the comparisons that I have made, I cannot make your bird out to be anything else than *E. leucura*; I may note that exactly similar specimens have been received from Siberia."

In regard to the female, he says, "I think your bird is a female of *E. parva*, with European specimens of which it precisely agrees." He adds, "M. Gerbe considers this to be the female of the foregoing, in which case it would be *E. leucura*."

It appears to me somewhat doubtful whether *E. leucura* is really distinct from *E. parva*. Most certainly, the distinctions pointed out by Mr. Blyth do not hold good with regard to many of our Upper-Indian specimens; and it will be observed that an experienced ornithologist like M. Verreaux felt disposed to refer the male to one species and the female to the other.

483 bis. PRATINCOLA RUBICOLA.

I have long suspected that we have in India two distinct races of Stonechat, the larger absolutely identical with the European, the smaller doubtfully separable as *P. indica*. This seems to me to explain much of the discussion that has taken place as to whether our Indian bird is or is not distinct from the

European. Some observers, with typical examples of the smaller race before them, have contended for the distinctness of the Indian bird, while others, whose experience has lain chiefly amongst the larger race, equally energetically hold the opposite view. It is the old story of the Chameleon; both parties are right, and also to a certain extent wrong. That two different types are met with in India, the one identical with the European form, the other differing, as pointed out by Mr. Blyth, from any specimens to be met with in Northern Europe, at any rate, hardly, I think, admits of a doubt; but at the same time, with a very large series from all parts of India before me, I am very doubtful whether this latter form is entitled to specific rank. Every possible gradation in size and colour between it and the typical *P. rubicola* is met with. As a rule, I have noticed that, while both races are to be found in the breeding-season throughout the Himalayas, the cold-weather visitants to the plains of India belong chiefly to the smaller or *P. indica* type. I do not mean to say that the larger does not occur even in Central India; but more than nine-tenths of the series belonging to the larger form that I possess were obtained in the Himalayas. I sent M. Verreaux home two of the Himalayan birds; and the following are his remarks on the subject:—"With the best inclination to do so, I find amongst the large number of specimens before me so many differences in particular birds, and so many gradations to your two specimens, that I cannot make up my mind to consider them different from our *P. rubicola* of Europe. We have here, nevertheless, specimens from India which bear the name of *P. indica*, which are really different; but yours are not like these." Doubtless these different ones belong to the smaller race.

485 bis. PRATINCOLA RUBETRA.

In regard to the specimen of this species which I sent him, M. Verreaux remarks, "Your bird, while appearing to be undoubtedly *P. rubetra*, is in all respects similar to specimens from Africa, which (especially those from Senegal) always appear to be paler than the European ones. In this, as in many other species, one must make allowances for climate: you could not separate your Indian birds as a distinct species; but if the pale colour is constant, it is worthy of notice, and of some scientific interest."

491. Saxicola saltatrix, Ménétriés.

I had long been certain that the bird described by Dr. Jerdon as *S. œnanthe*, of which I had numerous specimens, ought properly to be referred either to *S. saltatrix* (which is identical with *Motacilla stapazina*, Pall. Zoogr. vol. i. p. 447) or to *S. isabellina*, Rüpp. Zool. Atl. t. 28. f. 2; but I had grave doubts to which of the two our Indian bird really belonged, and also respecting the distinctness of these two species. M. Verreaux, after carefully examining my specimens, assures me that ours are undoubtedly *S. saltatrix*, and that he has recently received specimens from Siberia which are absolutely identical with ours.

†† 491 bis. Saxicola kingi*, sp. nov.

This is another species new either to science or to our Indian avifauna, which I picked out of a collection of birds formed in

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* *Saxicola kingi*, sp. nov. (female, killed at Jodhpoor, October 29, 1868).

Dimensions.—Length 6·5, expanse 11·3, tail from vent 2·3; wings when closed reach to within 1·05 of end of tail. Wing 3·7; the third primary is the longest, the second 0·25, and the first 2·0 shorter than the third. The tail is perfectly square. Bill, length at front 0·58. Tarsus 1·02. Foot, greatest length 1·25, greatest width 0·6; mid toe, to root of claw, 0·64, its claw (straight) 0·21; hind toe, to root of claw, 0·28, its claw (straight) 0·25; outer toe, to root of claw, 0·42, its claw (straight) 0·11; inner toe, to root of claw, 0·4, its claw (straight) 0·12.

Description.—Legs and feet black; bill black; irides dark brown.

Plumage.—A dark grey line from the gape to and under the eye, a broad, slightly greyish-white line from the nostrils over the eye. Ear-coverts silky rufescent brown; forehead greyish brown; crown, occiput, nape, back, and scapulars nearly uniform grey earthy brown, very slightly tinged with rufescent towards the rump; rump and upper tail-coverts bright rufous fawn; tail-feathers bright ferruginous, with a subterminal blackish brown band extending over both webs, and a narrow tipping of rufous white, which jets in at the shafts for about the tenth of an inch. The dark band is about 1·2 broad on the centre tail-feathers, about 0·7 on the feathers next to the centre, and 0·45 on the external ones. The tertiaries and most of the coverts are hair-brown, broadly margined with pale rufescent; the winglet, primaries and secondaries, and primary greater coverts are a slightly darker hair-brown, very narrowly tipped with white, and some of them, the secondaries especially, the neighbourhood of Jodhpoor by my friend Dr. King, who most kindly allowed me to select any specimens required for my museum. I knew that it was new to India; but, with the multitude of little-known African species in view, I hesitated to describe it until it had been examined in Europe. M. Verreaux remarks in regard to it, "I have sought for this species not only in collections but also in all the ornithological works I could think of, and have failed to find it, though I remember a similar specimen having passed through my hands when I was resident in South Africa, which specimen I had received from my friend Captain Latouche, who was living in India, and who had killed it himself; but it is so long ago that I cannot remember exactly when or where it was procured." Of course this is merely negative evidence; but considering M. Verreaux's great familiarity with this genus, and the opportunities at his command for identifying the species, if previously described, it is presumably new, and I designate it as above.

† 492 ter. AEDON FAMILIARIS, Ménétriés, Bp. Consp. Av. vol. i. p. 286.

Sylvia familiaris, Ménétriés, Zool. du Caucase, 1832, p. 32.

Whether this species is really distinct from *A. galactodes*, Temm., or not, is a matter which depends on individual conceptions of what constitutes a species. In adopting Ménétriés' name, all I wish to signify is that the form occurring in Western India most nearly approaches that of Southern Russia and Greece, and has less resemblance to the more richly coloured type of Western Europe and Northern Africa. M. Verreaux remarks, "After examining a great number of specimens, I could well suppose that this form is nothing more than *A.*

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very narrowly margined with pale rufescent. The chin and upper throat white, with a faint creamy tinge. The sides of the neck behind and below the ear-coverts grey, greyish white, and greyish brown, blending on the one side into the colour of the throat, and on the other into that of the back of the neck. The breast and upper abdomen are a very pale rufescent brown, all the tips of the feathers being paler. The centre of the abdomen and vent slightly rufescent white; flanks rufescent fawn; lower tail-coverts somewhat pale buff; wing-lining and axillaries pure white.

galactodes modified by the effects of climate. I should recommend you to consider your species as belonging to this latter, noticing, however, the peculiarity of coloration, because certain specimens which I have received from India exhibited the rich rufous colouring characteristic of *A. galactodes*." Here, again, it is necessary to note that, though M. Verreaux appears to have been aware of the fact, no English ornithologist had noticed the occurrence of this species in India until I noted it in the pages of 'The Ibis.'

† 513 ter. Lusciola akahige, Temm., Bon. Consp. vol. i. p. 295; Pl. Col. 571, &c.

With regard to a young bird which I procured not far from Nyneetal, in Kumaon, on the 10th September 1866, which Dr. Jerdon thought might be the young of some species of *Niltava*, and which I was inclined to refer to *Cyornis*, M. Verreaux remarks, "After careful comparison, I am compelled to refer this young bird to *Rubicula akahige*; and this is not an isolated instance of Japanese species occasionally occurring in India." It is to be presumed that M. Verreaux's identification is correct, in which case this species also must be added to our avifauna.

†† 517 bis. Acrocephalus macrorhynchus*, sp. nov.

In 'The Ibis' for 1869, p. 357, I provisionally classed this bird as a *Phyllopneuste,* remarking that it would have to be generically separated. On reexamining the specimen, I do not doubt that it is one of the *Calamoherpinæ,* and may for the present be placed amongst the *Acrocephali,* although it will, I believe, ultimately have to form the type of a new genus. M. Verreaux furnishes the following remarks:—"Except as regards the size, this species much resembles *Arundinax olivaceus*; it certainly is not a *Phyllopneuste,* and has none of the characters of that genus, while it has those of the *Calamoherpinæ.* I have never seen this bird before; it is not contained in our Museum; and I have not been able to find any notice of it anywhere. I think you may describe it as new." I obtained this species in the Sutledge Valley, in the interior of the Himalayas, not far from Rampoor.

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* *Acrocephalus macrorhynchus*, sp. nov.

Dimensions.—Length 5·0. Wing 2·3, first primary excessively minute, fourth primary the longest, third 0·05, second 0·12, first 0·4 shorter than the fourth. Tail 2·2, much rounded; exterior tail-feathers 0·48 shorter than central ones; all the tail-feathers much pointed. Tarsus 0·85; mid toe and claw 0·75; hind toe and claw 0·53, of which the claw is 0·29. Bill, at front, 0·55, from gape 0·78, width at gape 0·25, length of gonys 0·4, height at front 0·08. The bill is much depressed, the culmen-ridge well marked.

Description.—Bill, upper mandible dark brown. Legs and feet slightly olivaceous brown; claws, which are moderately curved and much compressed, pale brown. Plumage:—Whole upper surface (except quills and tail-feathers, which are hair-brown) rich olive-brown; cheeks and ear-coverts mingled buffy white and olive-brown; chin, throat, middle of abdomen creamy or dingy yellowish white; the rest of the lower parts more decidedly tinged with pale dingy rufescent brown, the tarsal plumes being very rufous; the wing-lining nearly pure white, slightly tinged yellowish towards the edge of the wing.

581. SYLVIA ORPHEA.

It has been a matter much disputed amongst ornithologists in India whether the species we here have is identical with *S. orphea* of Europe, or whether it is entitled to specific separation under the name of *S. jerdoni.* M. Verreaux, after a careful comparison, considers our bird to be the veritable *S. orphea.*

† 582 bis. SYLVIA CINEREA, Lath.

Amongst the birds collected by Dr. King at Aboo I observed one, under date 24th September 1868, which appeared to me not to be referable to either of the three species of *Sylvia* or *Curruca* described by Dr. Jerdon. It was one, too, which reminded me more of our common Whitethroat than any of these three species, of which I have many specimens from different parts of India. M. Verreaux pronounces it to be *S. cinerea.* It no doubt differs slightly from the English specimens I possess; but M. Verreaux remarks that he has observed similar slight variations, seasonal or individual, in the European bird, which is extremely common even in the gardens of Paris, and he does not think that this Indian specimen can possibly be separated from the European species.

† 583 bis. SYLVIA DELICATULA, Hartl.

I was not certain whether the specimens referred by me to this species, and collected for me in Bhawulpoor by Captain Marshall, had been correctly identified. M. Verreaux has kindly compared them with specimens from Abyssinia and Egypt, and can discover, he says, no difference.

† 583 ter. IDUNA SALICARIA, Pall., nec L. *Sylvia caligata*, Licht. *Lusciola caligata*, Keys. et Bl. *Iduna caligata*, Gr., Bon. Consp. Av. p. 295.

This is another novelty to our Indian avifauna. I picked it out as unlike any thing I had seen, and forwarded it to M. Verreaux. Unfortunately the specimen has not been returned to me; and therefore I cannot now be certain out of which of two large collections, one made in the interior of the Himalayas and the other in Western India, it was derived. M. Verreaux says, "After most careful comparison with several specimens from Siberia and Dauria, I cannot see that your bird differs from them in any respect. It is the *Iduna salicaria*."

Since writing the above, I have heard that Mr. Tristram identifies this species with *Phyllopneuste rama*. In this he may be correct; but I beg to point out that the bird sent by me to M. Verreaux was not *P. rama*, and that both he and I have for years been so thoroughly familiar with this latter species that any mistake on this point is impossible. Mr. Tristram goes, I believe, by the British-Museum specimen of *I. scita*. Who knows that this specimen is correctly named *? If it be so, how can M. Verreaux have named an altogether different species *S. caligata* vel *scita*? Where is the type specimen of *I. scita*? This seems to be a matter worthy of further inquiry.

593. BUDYTES VIRIDIS.

In a late number of 'The Ibis' I expressed my conviction that *B. melanocephalus* and *B. cinereocapillus* were merely forms of this species. I had sent home long previously several specimens of our Indian birds to M. Verreaux with the view of ascertaining whether what I called *B. cinereocapillus* and *B. melanocephalus* were *really* identical with the European forms to

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[* *Cf.* Gray, Hand-List, p. 209, where all the above names are placed as synonyms of *I. caligata*, Licht.; and the only localities cited are C. and S.E. Europe, Russia, Siberia.—ED.]

which these names have been assigned. M. Verreaux and M. Gerbe, after due comparison, have decided that our Indian birds are undoubtedly identical; and in a postscript M. Verreaux says, "After a fresh and careful reexamination with my friend M. Gerbe, we have come to the conclusion that *B. viridis* is only the young of *B. cinereocapillus* and *B. melanocephalus.*" This is very nearly my own conclusion; all I am as yet uncertain of is, whether *B. viridis* is the young or only a seasonal stage of the others: that *B. viridis* changes into *B. cinereocapillus* and *B. cinereocapillus* into *B. melanocephalus*, the series in my museum proves beyond the possibility of a doubt; but whether this change takes place yearly, or only once in the bird's life, is a question that I have not yet been able to solve. Further, I may add that M. Gerbe seems disposed to consider *B. flavus* a form of *B. cinereocapillus*; none of the specimens, however, obtained by me appear *quite* to correspond with this latter, while I possess innumerable specimens of typical *B. viridis, cinereocapillus,* and *melanocephalus,* and all possible intermediate gradations; and therefore, for the present, I am inclined to believe that *B. flavus* is either a distinct species or, at any rate, a distinguishable race which does not extend to India.

594. BUDYTES CITREOLUS.

Lord Walden is right, and I am wrong, in regard to this species. I sent M. Verreaux specimens of the larger Cashmere and northern Indian form, which I conceived to be *B. aureocapillus.* These M. Verreaux pronounces to be unquestionably *B. citreolus,* Pallas, and he remarks:—"Yours are excessively old birds, in nuptial plumage, such as we often receive from India, and more rarely from Siberia." The second species to which I referred (Ibis, 1870, p. 142), and which is much smaller in every way (and I have adults in full breeding-plumage of both males and females), must either be *B. calcaratus,* Hodg., or else new. Hodgson's description is noted as being found at p. 190, vol. xix. of 'Asiatic Researches,' a volume which I have as yet been unable to procure. Probably Lord Walden can, from the dimensions which I gave, decide whether the smaller bird is *B. calcaratus* or not; it probably is so, as all my specimens have been derived from Behar, Assam, and Darjeeling. Should it prove to be really new, I would name it after Mr. R. M. Adam, who first sent me numerous specimens in various stages of plumage from Tirhoot.

597. PIPASTES ARBOREUS.

In a late number of 'The Ibis' I mentioned that, in my opinion, *Pipastes agilis*, *maculatus*, and *arboreus* were one and the same species. Previously to writing this I had sent home specimens picked out by Dr. Jerdon from my collection as typical *maculatus* and typical *arboreus*, the one being of a greener tint everywhere, the other browner or yellower. I have an enormous series of this species from all parts of India, southern and northern, plains and hills; and I think I can safely say that they one and all unquestionably belong to the same species as the two typical forms which were sent home. In reference to these M. Verreaux furnishes the following remarks:—"The careful comparisons that I have made prove that your birds are both nothing more than *Anthus arboreus*, a species very common with us here. I had already in my possession a large number of specimens of these birds from India; and I had already come to the same conclusion as you have done, that all are referable to this species. This is another of those birds which undergo considerable local modifications according to climate and country."

602. AGRODROMA CAMPESTRIS.

Our Indian specimens of this bird appeared to me to differ somewhat from specimens received from Europe, especially in the entire absence of spots. M. Verreaux, while confirming the identity of the species, remarks that the absence of the spots is due to advancing age, and that the same is sometimes observable in old European specimens, and is by means uncommon in those from Northern Africa.

605. ANTHUS CERVINUS.

Having no European specimens to compare with, and feeling by no means satisfied of the distinctness of the supposed *A. rosaceus*, I sent a good typical specimen of our Indian form to M. Verreaux, pointing out that *A. rosaceus* was said to differ in its primrose-coloured axillaries. In reply, he remarks, "This Anthus appears to be *A. rufigularis* [this is Brehm's name for *cervinus*]. I have received already many similar specimens from India, and others from the Amoor, which do not differ in any respect from European or Algerian ones." I think that the question of the distinctness of *A. cervinus* and *A. rosaceus* requires reconsideration.

†605 bis. ANTHUS PRATENSIS.

Although I felt little doubts that the specimens I had procured belonged to this species, I sent one for comparison with European specimens to M. Verreaux, who says, "In this bird, as in many others received from warm climates, there appears to have been some slight modification in tint; but it is impossible to consider it distinct from *Anthus pratensis.* Independent of climatal changes, you must be aware that this class of bird is subject to material variations in plumage according to season and age."

†605 ter. ANTHUS SPINOLETTA, Linn.; A. AQUATICUS, Bechst. Pl. Enl. 661, 2.

Two specimens of this species (the one sent me from Mooltan, where it was killed in February by Capt. Marshall, and the other obtained by me from Kotegurh, in the Himalayas, in December) were submitted by me to M. Verreaux. This gentleman says that I have correctly identified this species, and remarks that he has long known of the occurrence of this species in India. No English writer, however, had, I believe, previously recorded its existence here. It is purely a cold-weather visitant with us.

†695 bis. PLOCEUS MEGARHYNCHUS?[*], nob., *vide* Ibis, 1869, p. 356.

With regard to this supposed species M. Verreaux remarks,

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[*] *Ploceus megarhynchus*, sp. nov.?

DIMENSIONS. Length 6·2; wing 2·95; tail 2·3; bill at front 0·7, from gape 0·84, height at front 0·24; tarsus 0·96, mid toe and claw 1·0, hind toe and claw 0·78.

DESCRIPTION. Legs, feet, and claws fleshy brown: bill pinkish brown, whitish on lower surface of under mandible.

Plumage. (*Winter Plumage*) Lores rufescent: head. cheeks, ear-

"I cannot but consider this identical with *P. flaviceps*, Cuv. nec Sw., a bird very common, and varying a good deal in length and size of bill." Dr. Jerdon and myself compared a couple of birds of this supposed new species with specimens of *P. baya*, *manyar*, and *bengalensis*. It certainly does not pertain to either of the three species known as such in India; but this by no means settles the question. The synonymy of this group requires elucidation. Blyth identifies *P. manyar*, Horsf., with *striatus*, Blyth, and *flaviceps*, Sw.; but Bonaparte, whom Verreaux follows, identifies *manyar* with *hypoxanthus*, and *striatus* with *flaviceps*, Cuv. It is therefore possible that the species described by Jerdon as *P. manyar*, Horsf., may be *hypoxanthus*, Daud.; but this seems very unlikely, as Mr. Blyth was well acquainted with this species. Or, again, Bonaparte may be wrong in uniting *striatus*, Blyth, with *P. flaviceps*, Cuv., in which case my supposed new species may be the true *P. flaviceps*. Under any circumstances this bird is new to our Indian avifauna, and is quite distinct from either of the three species described by Dr. Jerdon under Nos. 694, 695, and 696, pages 343 *et seq*.

†916 bis. EMBERIZA STRIOLATA.

I have already given an account in a separate paper of the nidification of this species. I only sent specimens home in order

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coverts, and nape slightly rufous olivaceous brown; the feathers of the forehead and crown with ill-defined central dark-brown streaks, and traces of the same on the feathers of the nape. Upper back and scapulars somewhat paler and less rufous brown, broadly and conspicuously centred with dark hair-brown. Lower back and rump the same pale slightly rufous olivaceous brown, unstreaked; upper tail-coverts similar, but with ill-defined hair-brown centres. Tail hair-brown, the feathers narrowly tipped and margined with pale rufescent. Wing-coverts and tertiaries deep hair-brown, broadly margined with pale rufous fawn; primaries and secondaries paler hair-brown, very narrowly margined with the same colour. Chin, throat, middle of abdomen, vent, and lower tail-coverts almost pure white, with only the faintest creamy tinge; the rest of the lower parts a dull rufous fawn, somewhat rufescent on the breast, sides, and flanks. The tail is much rounded; the lateral tail-feathers being from 0·37 to 0·4 shorter than the central ones. The specimens I possess were procured in December, in the Kumaon Terai, not far from Kaladoongee.

to make certain that there was no mistake as to the name. M. Verreaux remarks, "I consider this bird to be certainly *E. striolata.* After comparing your specimens with numerous others from different localities, I do not see my way to make a second species. Doubtless the wings in your specimens appear to be slightly longer, and the coloration of the upper parts is somewhat darker; but you are well aware that allowance must always be made for slight differences which species inhabiting different climates exhibit. Considerable changes, as I have often observed, result from differences of food and temperature."

†720 bis. EMBERIZA SCHŒNICOLA.

M. Verreaux confirms my identification of this species.

766 bis. ALAUDA ARVENSIS.

A specimen of a Skylark sent me from near Lahore by Capt. C. H. T. Marshall appeared to me to be precisely identical with the European species. I sent it to M. Verreaux, who remarks, "This, as you rightly conjectured, is *Alauda arvensis.* I have compared it with more than a hundred European specimens, and cannot discover the slightest difference."

III.—*Contributions to the Ornithology of Egypt.*

By Captain G. E. SHELLEY, F.R.G.S., F.G.S., &c.

I VISITED Egypt upon two occasions, and in all spent about six months in the country, during which time I devoted myself chiefly to collecting birds, my observations upon which I make the subject of the following notes. During my first visit I collected from the 30th of January up to the 9th of April, 1868, and on the second occasion from the 10th of February until the 10th of May, 1870, and brought home upwards of 500 specimens, including more than 150 species. I also identified for certain 30 other species, skins of which I did not preserve.

Owing to my having on both occasions been in Egypt at about the same season of the year, I missed obtaining some of the birds which I should probably otherwise have met with; but from the lateness of my stay, after the Nile was clear of its ordinary tourists, I obtained many species which are not generally found in collections from Egypt. I only travelled in Nubia on my second visit, when I spent a fortnight in that country.

As in six months it was impossible to make a complete collection, and as I omitted to obtain many of the more ordinary species, I have drawn from all the most authentic sources to complete the present catalogue of the birds that are found between the Mediterranean and the second Cataract.

I have carefully avoided the insertion of any species upon which, it appears to me, that there is any doubt, as for instance, *Haliaëtus albicilla* and several others, which I can only find the locality Egypt given to in Mr. G. R. Gray's 'Hand-list of Birds.' I have, however, inserted *Gypaëtus barbatus, Milvus migrans,* and *Ibis religiosus,* which may well be doubted as Egyptian species from any observations which have yet been made upon them, although a further knowledge of the avifauna of these regions will probably decide their right to a place in the present list.

1. Gypaëtus barbatus (L.). Bearded Vulture.

Dr. A. L. Adams (Ibis, 1864, p. 8) mentions having met with this bird at the Pyramids. I know of no other instance of its having been seen in Egypt. While we cannot well doubt that the Bearded Vulture has been observed in Egypt, we may yet feel very uncertain whether the specimen seen by Dr. Adams was really a true *G. barbatus* (Linn.), or belonged to the species which inhabits Abyssinia, *G. nudipes,* Brehm*.

2. Vultur monachus, L. Black Vulture.

By no means abundant in Egypt, but to be met with occasionally on the sandbanks or in company with flocks of *Gyps fulvus.*

3. Gyps fulvus (Gm.). Griffon.

I met with several hundreds of these birds at Edfos, round the body of a dead Camel, and saw small flocks of them on several other occasions. I observed a pair towards the end of April in the mountains of Aboo Fayde, where they were probably breeding.

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* [Qu. *G. meridionalis,* Keys. et Blas. *Cf.* Finsch, Trans. Z. S. vii. p. 200.—Ed.]

4. NEOPHRON PERCNOPTERUS (L.). Egyptian Vulture.

Abundant throughout Egypt, where they may be daily seen feeding in pairs or in flocks, seeking offal round the villages, or slaking their thirst upon the opposite mudbanks.

The irides in the young are brown, changing with age to deep crimson. The skin of the face in the adult is yellow, legs flesh-colour.

It appears that this species does not obtain its full plumage and crimson irides until the fourth year*.

5. BUTEO VULGARIS, Bechst. Common Buzzard.

By no means common in Egypt. We only shot this bird once, in an acacia wood near Benisooéf.

6. BUTEO DESERTORUM, Daud. African Buzzard.

It is highly probable that this bird is to be found in Egypt; but I do not know of any authentic instance of its having been captured there. I believe that I saw one in Nubia perched upon a small rocky island, some 40 yards from our boat, as we sailed by before a strong breeze.

7. BUTEO FEROX, Gm. Long-legged Buzzard.

I only met with a single specimen this year, although in 1868 it was very abundant, being rarely absent from any field where Quail were numerous. It is a lazy bird, seldom flying far even after being shot at, but soon alighting again upon some mound or heap of maize-stalks, whence it watches the fields. Specimens vary considerably in size and colouring. A very fine bird which I killed near Kom Ombos differed from any I had previously seen in having the tail brown and distinctly barred. They breed in Egypt in April.

8. AQUILA IMPERIALIS, Bechst. Imperial Eagle.

This bird I believe to be more plentiful in Lower than in Upper Egypt.

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* Natural History and Archæology of the Nile Valley and Maltese Islands, by Mr. A. L. Adams, p. 104.

9. Aquila nævia (Gm.). Spotted Eagle.

In winter this Eagle is very abundant in Egypt, which appears to be its favourite quarters at that season; but I believe it does not remain there to breed.

10. Aquila pennata (Gm.). Booted Eagle.

In 1868 I first met with this bird, in the Acacia woods near Benisooéf, toward the end of March, where we killed three and saw several others. These birds, like *Buteo ferox*, are very partial to fields where Quail abound. On my second visit to Egypt I did not meet with it.

11. Circaëtus gallicus (Gm.). Short-toed Eagle.

Tolerably plentiful throughout Egypt and Nubia. In 1868 I shot one of these birds on the Memnonium at Thebes, when it disgorged a snake two feet long.

12. Pandion haliaëtus (L.). Osprey.

Very generally to be met with among the rocks which approach close to the river, or on the neighbouring sandbanks, both in Egypt and Nubia.

13. Falco peregrinus, L. Peregrine Falcon.

Ranges throughout Egypt and Nubia, but is not very plentiful.

14. Falco barbarus, L. Barbary Falcon.

I saw a pair of Falcons, which I believe to have belonged to this species, near Edfoo, and on the following day I shot a handsome male specimen on a sandbank near El Kab.

This bird is admirably figured (Ibis, 1859, p. 184).

15. Falco lanarius, L. Lanner Falcon.

This is the most abundant of the large Falcons in Egypt. It breeds annually in the Pyramids.

I obtained an immature specimen at Kom Ombos, in brown plumage, somewhat resembling *F. jugger* of India. The two centre tail-feathers were without a spot; but it differed in the upper part of the chest being strongly marked with brown, and the top of the head being very pale inclining to rufous towards the back. Total length 17½ inches. Cere and eyelids pale greenish yellow, legs slaty yellow. It was a female, by dissection.

16. **Falco saker**, Schl. Saker Falcon.

By no means abundant. I only met with it twice in Egypt, and shot the specimen on each occasion.

17. **Falco subbuteo**, L. Hobby.

Dr. Heuglin (Ibis, 1860, p. 408) mentions that he killed an old bird of this species at Sioot in June 1852, and believes that it is to be found there all the year through. I have no other evidence for including this bird in my Egyptian list.

18. **Falco eleonoræ**, Gené. Eleonora Falcon.

Dr. Heuglin (Ibis, 1860, p. 408) writes of this bird, "Rare, and only as a migratory bird in Nubia." It has no other claims that I know of to a place in the present list.

19. **Falco concolor**, Temm.

Dr. Heuglin says (Ibis, 1860, p. 409), in speaking of this bird under the name of *F. horus* (Heugl.), "I have rarely observed this species in the rocky deserts of Egypt and Nubia. A. Brehm has described a young specimen of this species killed by myself in August 1852 near the so-called 'Fossil Forest,' at the Mokatam Mountains."

20. **Falco æsalon**, L. Merlin.

Very abundant in spring in nearly every thick Acacia clump, especially near Benisooéf, where I have seen as many as thirty in one day, yet I have never met with a female specimen in Egypt. This great preponderance of males, which has been remarked by others before me*, leads me to believe that it rarely, if ever, breeds in Egypt, although I have seen it as late as the beginning of April, but not paired at that season.

21. **Erythropus vespertinus** (L.). Orange-legged Hobby.

Dr. Heuglin (Ibis, 1861, p. 72) says that numerous flocks of this bird are often seen during the spring and autumn in Lower Egypt, and that single specimens are occasionally met with in Upper Egypt and Nubia, but that sometimes several years pass without a single specimen being obtained.

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* E. C. Taylor, Ibis, 1859, p. 45.

22. **Tinnunculus alaudarius**, (Gm.). Kestrel.

By far the most abundant Hawk in Egypt. On one occasion we saw at least one hundred in a single clump of Palm trees, attracted there, no doubt, by the Locusts which were passing in dense continuous clouds beneath them. These flights of Locusts spread this year (1870) throughout the country, clearing whole districts of every green crop as they passed.

23. **Tinnunculus cenchris** (Naum.). Lesser Kestrel.

I only shot this bird once; this was towards the end of March, near Benisooéf.

Dr. Heuglin (Ibis, 1861, p. 72) states that the Lesser Kestrel ranges throughout Egypt and Nubia, and is very common during the spring in Lower Egypt, especially round Alexandria.

24. **Milvus ægyptius**, Gm. Parasitic Kite.

This is a very common bird in Egypt, where it frequents every village or place where there is a chance of its obtaining filth. It is extremely curious and audacious in search of its food, often following the sportsman for a considerable distance; but I never observed it capture even a wounded bird, although I have seen it occasionally swoop at them.

Having one day shot a Kite upon a sandbank, I was soon surrounded by about thirty others approaching from all points of the horizon, although previously I had not seen one of them; when I stood up they kept out of shot, but as soon as I sat down by the dead bird, they circled round close over head. I have also often attracted them by sitting down and placing my handkerchief before me, and occasionally moving it.

They begin breeding in March, usually selecting an Acacia tree near some village.

Their nest appears invariably to contain some piece of old rag.

25. **Milvus migrans** (Bodd.). Black Kite.

I entirely agree with Mr. E. C. Taylor, that the number of individuals of this species cannot be compared with those of the last; for while *M. ægyptius* is undoubtedly extremely plentiful in Egypt, I have never been able to obtain any conclusive evidence of this bird having been killed in Egypt at all. Many black-billed specimens which we shot, the most doubtful of which I brought home, were simply immature birds, and may therefore have belonged to either species. The bill of the young *M. ægyptius* is black, and changes to yellow with age. This has been satisfactorily shown by three live specimens which Mr. Cavendish Taylor brought back from Egypt, and which are now in the Zoological Society's Gardens. So a black bill is not alone a criterion of the species to which such Kites belong.

Dr. A. L. Adams states (Ibis, 1864, p. 9) that this is the most abundant Kite in Egypt, which is undoubtedly an error, probably arising from his having considered all the black-billed Kites he saw as belonging to this species.

26. ELANUS MELANOPTERUS (Daud.). Black-shouldered Hawk.

This Hawk is very abundant throughout Egypt, and by no means shy. It generally frequents the Acacia trees, but I have rarely seen more than a pair in the same clump.

They begin breeding in February. On the 12th of March, at Golosaneh, we found one of their nests containing four young birds; it was placed near the top of a tall Acacia in the midst of a clump of those trees. The young were of a pale ash-colour, considerably darker on the back and top of the head, where the feathers were mostly tipped with brown; the chest was of a pale brown. On the 19th of April I obtained a handsome young bird in fine immature plumage: it differs from the adult in the grey feathers of the back and head being tipped with white, and in the soft brown shade upon the chest, where the centres of some of the feathers are marked with longitudinal spots of rufous brown. The irides of this specimen were hazel, while in the adult they are of a brilliant red-currant colour, and in the nestlings of a dark brown.

In 1868 I found two nests, each containing four eggs, which I have already noticed (Ibis, 1870, p. 150). During my last tour I found two more of these nests, one near Sioot, on the 17th of March, in a scattered Acacia clump. The nest, like the former ones, was placed near the top of the tree, and contained one egg very similar to the paler ones taken in 1868, but of a rather more painted appearance. The other nest I took at

Dendera on the 25th of March, where I found it in a low Acacia tree about twelve feet from the ground; it contained four hard-set eggs. The nest of this bird is rather carefully constructed of sticks and reeds, and is smoothly lined with dried leaves of the sugar-cane.

27. ASTUR PALUMBARIUS (L.). Goshawk.

We shot a fine female specimen of this bird at Benisooéf on the 24th of March, 1868. This is, I believe, the first notice of a Goshawk having been shot in Egypt.

28. ACCIPITER NISUS (L.). Sparrow-Hawk.

Very abundant throughout Egypt and Nubia.

29. CIRCUS ÆRUGINOSUS (L.). Marsh Harrier.

Met with throughout Egypt and Nubia, but far most abundant in the Delta. I cannot pass over this species without a remark upon a fine series of seven specimens which I brought back, in the many varied stages of adult plumage with grey wings and tail, all of which proved to be males by dissection, from which it would appear that the females do not so readily attain that peculiar stage of plumage, if they do so at all. My specimens vary extremely among themselves: one has the head and chest cream-colour marked with longitudinal spots of rufous brown, and is an extremely handsome pale specimen from Damietta. Another one, from Nubia, is of a general dark brown colour, head and shoulders varied with buff, tail entirely grey, and wings well marked with the same colour, the under part of the wing of a deep brown very sparingly marked with buff, while in my other six specimens the same part of the wing varies from pure white to very pale cinereous brown. My Nubian specimen was a diseased bird, as shown by the legs and bill, and may consequently have attained its peculiar plumage from an imperfect moult, which has caused it only to assume the grey tail and wings, while the rest of its plumage has remained nearly the same as in the immature bird.,

30. CIRCUS CYANEUS (L.). Hen-Harrier.

This is the least common of the three species of Harriers included in the present list. It is most frequently met with, in company with *C. pallidus,* in rows of Acacia trees.

31. Circus pallidus, Sykes. Pale-chested Harrier.

This is the most plentiful of all the Harriers in Upper Egypt. I shot several small immature birds of this species, which at first I was inclined to consider as belonging to *C. cineraceus*; and similar specimens have probably caused others to include Montagu's Harrier among the birds of Egypt. These specimens have the whole of the under part of a nearly uniform pale cinereous brown, with the upper tail-coverts pure white. They may be most easily recognized by the length of the wing being shorter in proportion to the bird than it is in *C. cineraceus.*

32. Athene meridionalis, Risso. Southern Little Owl.

This little Owl is extremely plentiful throughout Egypt, frequenting alike both trees and rocks, but more especially the small clumps of trees which surround the water-wheels so abundant throughout Egypt. It breeds in March.

33. Bubo ascalaphus, Sav. Egyptian Eagle Owl.

This handsome Owl is very generally distributed throughout Egypt and Nubia. It breeds in March.

34. Scops zorca (Gm.). Scops Owl.

The only Egyptian specimen of this Owl which I have seen was shot by Mr. E. Cavendish Taylor last April, at Alexandria, where he tells me that it is not uncommon.

35. Otus vulgaris, Flem. Long-eared Owl.

This Owl is sparingly distributed throughout Egypt.

36. Otus brachyotus (L.). Short-eared Owl.

This is probably the only one of the six species of Owl found in Egypt that does not remain throughout the year.

37. Strix flammea, L. Barn-Owl.

Tolerably abundant throughout Egypt.

38. Caprimulgus europæus, L. Goatsucker.

Dr. Von Heuglin, in his 'Ornithologie Nordost-Afrika's,' says that this bird passes through Egypt on its way south in

August, and is found on its return passage in Lower Egypt in March and April.

39. Caprimulgus isabellinus, Temm.

This bird is not very plentiful in Egypt. On my first visit I observed several birds of this species at How flitting over the water at sunset. This year I shot the only specimen I saw, in a field of rough herbage opposite Aboofáyda.

Mr. S. S. Allen mentions (Ibis, 1864, p. 236) that he discovered two distinct varieties, one much darker than the other, and thinks it probable that *C. europæus* is also found here.

40. Cypselus apus (L.). Common Swift.

This is not the common Swift in Egypt, nor do I know of any authentic instance of its having been captured in that country. The *C. apus* of other Egyptian lists probably in every instance refers to the next species (*C. pallidus*), which is an extremely abundant bird in the country, and is the only species to be met with up to the end of April. *C. apus*, which is abundant throughout Africa and Palestine, must, it appears to me, be found in Egypt; and for that reason I now include it in the present list.

41. Cypselus pallidus, G. E. Shelley.

I named and described this species (Ibis, 1870, p. 445). It has long been included in Egyptian lists as *C. apus*, from which bird it differs in its rather smaller size, whiter throat and generally paler colour, which latter character suggested the name *C. pallidus* as appropriate. I never met with any other Swift in Egypt; but the present species is extremely abundant throughout the country, arriving in February. It may be distinguished from *C. apus* at a considerable distance; and when I first shot it I did not believe it to be identical with that bird. When I returned I found that Mr. E. C. Taylor agreed in my views, which made me particularly careful on revisiting Egypt to procure more specimens; and I watched in vain among the many that I daily saw for one dark specimen. In habits it appears to agree entirely with *C. apus*. It was not, apparently, breeding up to the 3rd of May, when I last shot it. Major Irby has procured this species from Tangiers, where, he says, it arrives before *C. apus*.

42. **Cypselus parvus**, Licht.

Dr. Heuglin in his 'Ornithology of North-East Africa,' p. 144, mentions this bird as found in southern Egypt and Nubia.

43. **Merops apiaster**, L. Common Bee-eater.

Arrives in Egypt about the 10th of April, and is then very plentifully distributed in flocks throughout the country.

44. **Merops persicus**, Pall. Blue-cheeked Bee-eater.

This bird visits Egypt about a fortnight earlier than the last species, which it resembles in size, habits, and cry; yet I have never met with both species in one flock. I observed them once towards evening alight in such immense numbers upon a sandbank that it looked almost as green as meadow-land. They, however, appear generally to roost at night in the Acacia trees.

45. **Merops viridissimus**, Sw.

This beautiful little Bee-eater I did not meet with until I reached Golosaneh, in the beginning of March, although I had spent the previous month in the Delta. When I was up the Nile before, I first came across this species in the same locality towards the end of January, from which I am inclined to consider Golosaneh its most northern winter limit. It is most beautiful to watch these birds, their plumage glistening in the sun as they fly from one tall Palm tree to another, their outstretched wings showing the orange underneath like an illuminated transparency. They are very abundant throughout Middle and Upper Egypt; but I only met with one specimen in Nubia.

46. **Coracias garrula**, L. Roller.

The Roller is only a bird of passage in Egypt, arriving about the end of April on its way north. We first met with it at Koos on the 26th of April; and two days later I killed three out of a party of four that I saw at Dendera. They were invariably in pairs.

47. **Alcedo ispida**, L. Common Kingfisher.

Very abundant in the Delta, and occasionally met with throughout the whole extent of Egypt. Personally I have seen it three times above Cairo, at Sioot, Koos, and Thebes.

As I knew that *A. bengalensis,* a very closely allied species, was to be found in Egypt, I brought back five specimens, all of which, however, proved to belong to the present species, though of a very constant small type. I include the measurements, as some may like to compare them with those given by Mr. Sharpe in his Monograph of the Kingfishers, part 9. Total length in inches 6·97, bill from 1·50 to 1·56, wing in all five specimens 2·97.

48. ALCEDO BENGALENSIS, Gm.

Mr. Lord brought home a specimen of this bird which he killed at Shoobra near Cairo, and which has been described by Mr. Sharpe in his Monograph of the Kingfishers, part 9.

49. CERYLE RUDIS (L.). Black and white Kingfisher.

This bird is very evenly distributed throughout Egypt and Nubia, and may be daily seen perched upon some steep bank, or on a bough which has fallen into the water, or else hovering with beak directed downwards over the stream, into which it darts boldly after its finny prey. If unsuccessful, it goes through the performance again and again. At other times it flies slowly, close over the surface of the water.

It begins breeding about the end of March, laying its eggs in deep holes, which it drills in the steep river-bank.

50. UPUPA EPOPS, L. Hoopoe.

This bird is extremely plentiful throughout Egypt and Nubia, frequenting the neighbourhood of villages, where it may be daily seen perched upon a mud wall or bough singing its simple song of "Poop, Poop, Poop," or else strutting along the ground with dignified gait, stopping here and there to drive its beak into the earth after its insect food.

Mr. E. C. Taylor (Ibis, 1867, p. 56) states that he procured eggs and young in March.

51. CUCULUS CANORUS, L. Common Cuckoo.

Rare in Egypt. I only remember having heard this bird on two occasions. I shot one on the 6th of April near Memphis. It does not winter in Egypt.

52. Coccystes glandarius (L.). Great Spotted Cuckoo.

This graceful bird is very abundant throughout Egypt in the spring, always frequenting the Acacia trees. About half of those that I saw were in immature plumage even as late as May. They are by no means shy, and will often sit motionless on a bough while one walks beneath the tree. Their cry is rough and peculiar. They breed at the same time as the Hooded Crow, invariably selecting a nest of that species in which to deposit their eggs.

53. Centropus ægyptius (Gm.). Strait-heeled Coucal.

Rare. Mr. E. C. Taylor obtained one specimen in the Delta; and I have seen it in other collections from the Nile.

This species must not be confounded with *C. senegalensis*, its West-African representative, from which it chiefly differs in its rather larger size, and in being much less rufous on the back.

54. Yunx torquilla, L. Wryneck.

I only shot this bird once (at Memphis, on the 9th of April), though it is not uncommon as a bird of passage.

55. Turdus musicus, L. Song Thrush.

To be met with throughout Egypt, but far most abundantly in the Delta.

56. Turdus merula, L. Common Blackbird.

By no means common in Egypt. I met with one specimen in the Delta, and a pair a few miles north of Benisooéf.

57. Petrocincla saxatilis (L.). Rock-Thrush.

Travels north in April, and evinces a strong partiality for Arab burying-grounds (Ibis, 1864, p. 238). Mr. E. C. Taylor found it common at Damietta in April.

58. Petrocincla cyanea (L.). Blue Thrush.

We frequently met with this species wherever there were rocks, except in Nubia, where I did not observe it, although I have no doubt that it is not uncommon there, as it certainly ranges throughout the entire length of Egypt, and breeds in the country.

59. Pycnonotus arsinoë (Licht.).

This bird appears to be abundant in pairs among the Palm trees which are interspersed with the houses of the Nubian village of Wady-Halfeh. Mr. Smith, in his 'Attractions of the Nile,' vol. ii. p. 222, gives a very good description of its habits, under the title of *Ixos obscurus.* Dr. A. L. Adams (Ibis, 1864, p. 20) mentions Wady-Halfeh as probably its most northern limit on the Nile; this conclusion I think is hasty, as it is abundant there in winter; yet I know of no instance of its having been killed in other parts of Nubia or in Egypt.

60. CRATEROPUS ACACIÆ, Rüpp. Bush Babbler.

This bird is well named; for it appears to keep exclusively to the thickest Acacia bushes, among the thorny and tangled boughs, over which it creeps, while it keeps up an incessant babbling cry, which is rather pleasing, and when once heard cannot be mistaken for the note of any other bird. I met with it on both my visits to the island immediately below the rapids of the first Cataract, and saw a flock of four of these birds in Nubia.

In the beginning of April I found two nests, probably of this bird, on the island immediately below the first Cataract. In construction and size they closely resembled the nest of our Common Blackbird. They were almost entirely built of a coarse grass which grows abundantly in Egypt—and were on each occasion placed in thick Acacia bushes, about 5 or 6 feet from the ground. There were no eggs in either nest.

61. ORIOLUS GALBULA, L. Golden Oriole.

The Golden Oriole arrives in Egypt about the 20th of April, but does not remain there to breed. I shot my first specimen out of a flock of six at Edfoo on the 21st of April, and after that met with them daily among the thicker-foliaged trees.

62. SAXICOLA ŒNANTHE (L.). Common Wheatear.

This well-known Chat does not remain in Egypt during the winter. It appeared to me to be the most abundant and widely distributed Chat of any, being equally at home in Nubia and on the shores of the Mediterranean.

63. SAXICOLA SALTATRIX, Ménétr. Ménétriés Wheatear.

Abundant throughout Egypt. It has frequently been mistaken for the female *S. œnanthe,* from its plumage being somewhat similar; but it is a larger bird, and the bill is stouter in proportion to its size. The sexes are similar in plumage.

64. Saxicola aurita, Temm., var. *libica,* Hempr. & Ehr.

This Wheatear, like *S. eurymelæna,* is a non-resident in Egypt, arriving there in March, where it frequents the cultivated portions of the country.

65. Saxicola eurymelæna, Hempr. & Ehr.

This is the common Egyptian form of *S. stapazina,* from which it chiefly differs in the greater extent of black on the throat. It is tolerably abundant, frequenting the cultivated land, especially in the neighbourhood of cotton-plantations, which offer it a favourable retreat when pursued. It arrives in Egypt in March.

66. Saxicola xanthomelæna, Hempr. & Ehr.

Mr. E. C. Taylor obtained the only specimen of this bird I know of from Egypt. It is very closely allied to the last species, from which it differs in the absence of black feathers on the forehead, and in the crown of the head and back being more yellow and brighter in colour.

67. Saxicola deserti, Rüpp. Desert Chat.

This species is resident in Egypt throughout the winter.

68. Saxicola homochroa, Tristr.

Mr. E. C. Taylor shot one of these rare Chats near Cairo. This species was first described by the Rev. H. B. Tristram (Ibis, 1859, p. 59).

69. Saxicola lugens, Licht. Mourning Chat.

Mr. E. C. Taylor says (Ibis, 1867, p. 60) "This is the most abundant of all the Chats near Cairo in the winter." Personally I only met with it on two occasions, in the desert near Cairo and among the rocks near El Kab.

The sexes are alike in plumage.

70. Saxicola monacha, Rüpp.

We came across a small colony of these birds at El Kab, where we obtained a male and female in full breeding-plumage on the 26th of February. I never met with another specimen during either of my tours, although I believe it remains in the country throughout the year. It frequents the more barren and rocky districts.

The sexes are very different in plumage.

71. SAXICOLA LEUCOPYGIA, Brehm.
S. leucocephala, Brehm.

These birds undoubtedly belong to the same species. They are first met with by the Nile tourist at Assouan, and on entering Nubia become extremely abundant. As early as April I saw several young birds, all black-headed, two of which I shot, in company with their undoubted parents, white-headed birds, of which I likewise killed two. It is comparatively rare to meet with a purely black-headed specimen, most having one or more white feathers on the crown. I have shot them with the black and white feathers mixed in nearly equal proportions. I never saw a black-headed bird paired with a white-headed one; but Mr. E. Cavendish Taylor tells me that he has observed them together: the rarity of such an occurrence may I think be explained by their choosing their mates the first year, and consequently pairs being of the same age.

These birds are only shot in Egypt by the Nile tourists—that is, killed before the month of April, in the early part of the breeding-season. Now, if a white-headed specimen is shot, its mate would probably not pair again until the traveller had left the country; and should it select for its future partner a black-headed bird, that bird by the following year, before it can be observed by the ornithologist, will have gained the white head; and consequently it must be extremely rare to observe black-headed and white-headed birds paired. On account of the rare occurrence of birds of this species being paired while in their different plumages, I am led to consider that the white head is attained after the first breeding-season.

In conclusion, I propose that the name *Saxicola leucocephala* be erased from our lists of species, as only applicable to birds of a certain age, and that that of *Saxicola leucopygia* be made to include them all. Otherwise, while the parent bird might be "*leucocephala,*" the young one from its nest would be "*leucopygia.*"

72. **Pratincola rubicola** (L.). Stone Chat.

This bird is very plentiful in the Delta, but comparatively scarce in other parts of Egypt, although it may occasionally be met with in Nubia.

73. **Pratincola rubetra** (L.). Whin Chat.

I have shot this bird both in Egypt and Nubia, but it is by no means abundant.

[To be continued.]

IV.—*A List of the Birds of Southern Spain.*

By Howard Saunders, F.Z.S.

It was originally my intention to limit the following remarks to the ornithology of the Spanish provinces of Andalucia and Murcia; but having observed some interesting birds during a recent visit to the east coast and to the Balearic Islands, I have been tempted to extend my notes so as to include all species which occur south of 40° N. latitude, a line which passes through Aranjuez. I am principally acquainted with the birds of Andalucia, where I passed portions of the years 1867, 1868, and 1869; in the latter year I left at the end of April. I have, however, had the benefit of the later experiences of Lord Lilford, who did not leave that province till June of last year, and who has in the kindest manner supplemented my notes with much valuable information.

Occasionally availing myself of the local lists mentioned below, I have carefully omitted every species therein recorded of the occurrence of which I do not feel certain. At the same time I have added remarks on some species stated to occur in Spain, and on others which one might reasonably expect to find there, though this probability must not stand for sufficient proof of their actual presence.

I have inserted no Spanish names, except those which I have ascertained for myself; others, for the most part Castilianized forms of scientific names, may be found in the local lists, but their admission would be of little benefit. As a rule the names employed are those in use in Andalucia; but in a few cases I have added the Murcian, Valencian, and Mallorquin ones where

I thought they might be of use, and when I could guarantee their correctness. There is a strong similarity between many of the local terms employed on the east coast and in the Balearic Islands, and those of Sardinia and Sicily.

The Lists I possess are the following:—

Catálogo metodico de las Aves observadas en una gran parte de la provincia de Murcia, por Don Angel Guirao, &c. &c. Madrid 1859, with the author's manuscript additions in my copy to 1867. One of the very best lists, containing valuable, but alas! too scanty information.

Catálogo de las Aves de la Albufera (de Valencia), por Don Ignacio Vidal, &c. &c. Published in the Memorias de la Real Academia de Ciencias, tom. iv. Madrid 1856. Correct as to species, but terribly poor in details. The Museum at Valencia contains decidedly the best local collection in Spain.

Catálogo de las Aves observadas in las Islas Baleares, por Don F. Barceló y Combis &c. &c. This useful list for local names has been compiled by a highly intelligent Professor, who has had the advantage of the acquaintance of Herr A. von Homeyer. He is, however, no longer Professor of Natural History; and at the present moment there are not above a dozen decent specimens of birds in the Palma Museum, which ten years ago possessed a good collection.

Catálogo de las Aves observadas en algunas provincias de Andalucia, por Don Antonio Machado. Sevilla, 1854. A provisional list, to which the author promised a supplement, in which the Waders especially were to be treated. This promise was never fulfilled; and the attractions of politics having proved superior to those of science, the author has his reward in being now Governor of Seville.

Catálogo de las Aves observadas en Andalucia, por Don Victor Lopez-Seoane y Pardo Montenegro, 1860. This list principally treats of the ornithology of Granada, and contains more details than any other; but some palpable errors disfigure its pages, and destroy confidence in several species therein enumerated. The author, who appears to have been acquainted with one or both of the Brehms, is referred to as Seoane, his full title being somewhat lengthy.

All these, however, are merely *lists*, giving little information beyond stating that a bird is common or rare. It unfortunately happens in Spain that one Professor or "Catedratico" is appointed to the whole department of Natural Science—Zoology, Botany, Geology, and other 'ologies, at which he works in cycles; and it was my misfortune to find, wherever I went, that the Professor had finished his "ornithological cycle" some ten or even twenty years previously, and was in consequence by no means well posted up in that branch. On the other hand they, and, indeed, all Spaniards, are most desirous of affording any assistance in their power; and I can never be sufficiently grateful for the kindness I have experienced in all parts of the Peninsula and in the Balearic Islands, especial thanks being due to Don Angel Guirao, of Murcia, and to the Otero family at Seville.

I have endeavoured to avoid swelling the bulk of the present list by the repetition of any details already given in 'The Ibis,' 1869, pp. 170 and 397. I am well aware of its many imperfections; but I trust it may be of some use to future visitors to Spain, and the more omissions they discover the better I shall be pleased.

1. **Vultur cinereus.** "Buitre negro."

By no means rare throughout Andalucia, nesting in pine trees in the forests of Segura, also near Utrera. All the eggs taken in Spain are much suffused with colour, many being as strongly marked as those of *Neophron percnopterus*.

I have nothing to add to Lord Lilfôrd's account of the nesting of this species in the Castiles. It is resident in Mallorca, where I observed it.

2. **Gyps fulvus.** "Buitre franciscano."

This is the common Vulture of the country, breeding in small colonies in every mountain-range. It lays early in March, as I found some young birds in the first week of April. The eggs (usually one, but occasionally two) have seldom any genuine marking; but I know of a colony of six where the eggs are always somewhat spotted and streaked. Both the above species are indiscriminately called "Buitres," pronounced "Butres" by the peasants.

3. Neophron percnopterus. "Alimocha," "Grajo blanco;" "Abanto," in Sierra Nevada; near Seville, "Rejilero."

Common, except in winter, when but few remain in the country. The 10th of April is the earliest date on which I have found eggs, which are generally two in number. During the breeding-time I never saw an immature bird in the mountains; nor amongst the hundreds which frequent the cattle-pens in the plains (called *rejiles*, whence the name *rejilero*) did I ever find any but birds of the first or second year.

4. Gypaëtus barbatus. "Aguila barbuda," "Quebranta-huesos."

One or two pairs may be found in every range of mountains; but the species is most abundant in the Sierra Nevada. I never failed to see it every day I passed the Gaitanes range, about twenty miles from Málaga, whence I received a nestling half in down, taken on the 4th of May, 1869. This year a live one was sent me, which is now in the Zoological Society's Gardens. In the Institute at Granada are two birds of the year, which, according to the Curator, were captured at night upon the nest, having probably returned to roost there. The Rev. A. C. Smith, in his "Notes on the Birds of Portugal" (Ibis, 1868, p. 434), appears to be under the misapprehension that the term Pica-osso, applied to *V. cinereus*, belongs properly to the present species. Pica-osso means a "bone-picker," an excellent name for a Vulture, whereas "Quebranta-huesos" is emphatically a "bone-smasher," a term which would be utterly misapplied to a Vulture, but singularly appropriate to the Læmmergeyer, whose smashing proclivities have been well known since the days of Æschylus *.

This species often lays but one egg; still two fertile eggs are by no means uncommon. The young bird is covered with sooty-brown down, lighter on flanks, and darker on head and throat.

5. Falco peregrinus. "Halcón."

Common throughout the country, breeding in every mountain-range. Specimens in my collection are fully as large as any from more northern localities.

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* [*Cf.* Ibis, 1860, p. 282.—Ed.]

6. FALCO LANARIUS.

Under the synonym of *F. feldegii* this species is mentioned by Don Angel Guirao as having occurred near Murcia, and by Lopez-Seoane as being in the Museum at Granada; but I have not seen either of these specimens. The former was sent to Madrid, where I searched for it in vain, as I have also in two successive years for the latter. "I have myself seen a large true Falcon which was not a Peregrine," to quote a letter of Lord Lilford's respecting one which he saw near Lomo del Grullo in May 1869. Still I had omitted this species, until within the last few weeks I received evidence of its having been obtained near Utrera.

In the Museum of Jerez are the remains of a Falcon which, from its general appearance, ruddy nape, and large feet, I take to be *F. barbarus*. Unfortunately, this bird having been kept in captivity for some time, its tail and wings became dirty and ragged. This offended the eye of the Curator, who thereupon rounded them neatly off with a pair of scissors!

7. HYPOTRIORCHIS ELEONORÆ.

Although I felt certain that I had seen a pair of this species near Seville in April 1869, I was not enabled to identify it positively until this year, when on the 19th and 20th of May I found it in great abundance at the Island of Dragonera, off the west of Mallorca. This rock, for it is little more, is in appearance very similar to Gibraltar, though of somewhat less elevation, being only 1180 feet from the level of the sea to the base of the lighthouse, which is perched on the summit. As the Falcons fly very high, it is not easy to obtain specimens; for, though they hawk for food over the sloping side of the rock, it would require a prolonged stay to get a shot with a chance of the bird falling on land. When sitting with my legs dangling over the precipice, a little below the highest peak, these birds passed backwards and forwards within a few yards, as thick as Swallows on a summer's evening. They were in both the uniform sooty, and also in Hobby-like plumage, in about equal numbers; many of the latter, from their size, I judged to be females. One of the fishermen informed me that he had once found a clutch of three eggs, which he described correctly, and which of course he had eaten; but the majority of the nests, placed in the holes of the sheer precipice, are perfectly inaccessible, so much does the upper part overhang. The Rock-Pigeons (*Columba livia*), of which there were great numbers, did not show the slightest fear of these Falcons. The fishermen call them "Esparver."

8. HYPOTRIORCHIS SUBBUTEO. "Alcotan."

This species does not appear to be very numerous, though generally distributed. Lord Lilford informed me that it was certainly nesting in the pine woods of Coria in May; and this year I received the eggs from that locality.

9. HYPOTRIORCHIS ÆSALON.

Not uncommon in winter.

10. ERYTHROPUS VESPERTINUS.

This occasional visitor is more often obtained on the eastern coast than elsewhere; but years often elapse without a specimen being seen. I never met with it during any of my visits.

11. TINNUNCULUS ALAUDARIUS. "Cernicalo," "Primilla."

Abundant everywhere, breeding in great numbers in the woods, as well as in the crevices of old buildings, especially churches. I fancy that there is either an intermediate race, or that this species and *T. cenchris* interbreed, as I took a white-clawed bird off hard-set eggs in the Cathedral of Seville on May 16th, when the latter had scarcely begun to lay its very distinct eggs; in length of wing this female is identical with specimens from other localities.

12. TINNUNCULUS CENCHRIS. "Primilla."

The majority arrive in March and April; but some remain in Andalucia all the winter. The birds swarm about old buildings; and hundreds may be seen any summer's evening in Seville hovering round the statue of Faith which crowns the Giralda. It is a somewhat late breeder; for on the 16th of May I had difficulty in obtaining a complete clutch of eggs.

13. ELANUS MELANOPTERUS.

A rare visitant, of which I possess an adult male shot near

Seville in April; it is also mentioned by Seoane as having occurred near Granada.

14. Pandion haliæetus. "Aguila pescadora."

I have frequently observed the Osprey near Malaga in winter, also at Gibraltar, where Lord Lilford informed me that he found the nest in June 1869, in a crag overhanging the sea, and distinctly saw with a glass both young and parent birds. I was therefore not surprised at finding its nest on the 20th May of this year on the aforesaid Island of Dragonera. It was a huge structure, nearly three feet thick, placed on a projecting crag some 700 feet above the sea. The female was evidently sitting close; for she settled down on the nest whilst we were gazing at it; and as half an hour previously I had shot a young female of that year, it is probable that in southern countries two broods are sometimes reared. From recently received information I think it may also nest in the woods of the Coto de Doñana near the sea-coast.

15. Pernis apivorus. "Gavilan;" Valencian, "Pilotero."

Very abundant in May on the passage northwards, the regularity in the date of its appearance being remarkable. On the 9th of May 1868, a friend in the Gaitanes, who possessed a stuffed specimen which he saw me examining, observed that they were just due; and the very next day at noon, as we were returning from taking the young of *Aquila bonelli*, many hundreds passed over. On referring to an old note-book I find that on the evening of 9th May, 1863, whilst walking out to Europa Point at Gibraltar, I observed many hundreds crossing the Strait, and, having a powerful glass, I could make them out distinctly. Roosting that night in the Cork wood, they would be due in the Gaitanes as near noon on 10th May as possible! I never heard of its breeding.

16. Circaëtus gallicus. "Aguila melion."

Abundant in winter in the marshes, and by far the commonest breeder in the wooded districts, where it invariably selects a tree for its nest, wherein it deposits one large white egg.

17. Haliæetus albicilla.

Rare: I saw one specimen obtained near Cadiz in winter.

18. Aquila fulva. "Aguila real."

Breeds in every mountain-range. In the Sierra Nevada it is considered the commonest of the large Raptores. I know of one eyry in the Gaitanes, and observed the species in Mallorca.

19. Aquila imperialis. "Aguila Imperial."

"Aguila real" is the usual name near Seville, where it is tolerably abundant, nesting in the trees of the Cotos del Rey and Doñana. All the adult Spanish specimens I have examined, amounting to about a score, have more white in the feathers covering the carpal joints, and less on the scapulars, than average specimens from Eastern Europe.

20. Aquila nævioides.

Undoubted Spanish specimens have been so named by Mr. J. H. Gurney and other high authorities; and until quite recently (Ibis, 1869, p. 402) I fully believed that the tawny-coloured birds existing in many Spanish museums, as well as in Lord Lilford's, my own, and other collections in this country, belonged to this species. But now, whilst by no means denying the occurrence of *true A. nævioides* in Spain, I am convinced by the inspection of a large series that these café-au-lait-coloured birds are simply *A. imperialis* in immature plumage. There are now before me six specimens, presenting every gradation of plumage, from pale-tawny up to adults with white shoulders, all of which, allowing for sex, agree in their dimensions—whilst they one and all differ materially from *A. nævioides* from Abyssinia, and from four adult specimens of *A. clanga* (generally admitted to be the same) shot off their nests in Southern Russia. In these, and in the three living specimens of *A. nævioides* in the Zoological Gardens, the closed wings almost reach to the extremity of the tail; but in adult *A. imperialis*, alive or in skin, and in these tawny birds, the tail extends far beyond the tips of the folded wings, and the general dimensions are also larger. Major Irby broached the idea of their being identical with *A. imperialis* in July last; but at that time I had not before me so complete a series, nor had I then been able to examine their *sterna*, as I have since done, finding they do not differ appreciably from those of true *A. imperialis*. With regard to the young *A. imperialis* obtained from the nest in 1869, Lord Lilford writes to me, "They are much as they were, and, though they have moulted very clean, show no signs of the spotted plumage which I have always thought was their second stage." But I have no proof that *A. imperialis* is spotted in its second stage; and, again, diet and the absence of the blazing sun of Andalucia may have affected, or at least retarded, the development of what, in Spain, is probably the second year's plumage. I believe that *A. imperialis* assumes a *lighter* plumage after emerging from that of the first year, and gradually passes into the full brown-black of the adult; and as a proof of this, an undisputed specimen now before me with a good deal of white on the shoulders exhibits an orange-tawny breast richly streaked with black, like that of an immature *A. bonellii.* And in further corroboration I would observe that, with a high price put upon any "tawny Eagle" shot from the nest, neither our Andalucian collectors nor the veteran Manuel de la Torre, of Madrid, have as yet succeeded in obtaining a single specimen in the act of incubation.

21. AQUILA NÆVIA.

I never obtained this species, which is of rare occurrence, especially in western Spain. Lord Lilford reminds me of a specimen which once existed in the Museum of Seville, and I have a dim recollection of one at Jerez; but at any rate there is a fine example in the spotted plumage in the Valencia Museum.

22. AQUILA BONELLII. "Aguila blancuzca," adult; "Aguila perdicera."

The commonest rock-breeding Eagle in the country, descending to the marshes in winter. Its food appears to consist principally of rabbits and, to judge from the feathers I found in a nest with young, of Partridges, Quail, Sand-grouse, and Little Bustard. The original lining of the nest is usually dry grass, "esparto," in a word. The eggs, never more than two, often but one, are almost colourless.

23. AQUILA PENNATA. "Aguilucho," "Aguila calzada."

This species, though generally distributed over the wooded portions of the country, is more abundant in the Castiles than in Andalucia. I have invariably found it nesting in trees, lining its nest with green boughs, generally of the white elm, as described by Lord Lilford in 'The Ibis' for 1866, to whose admirable account I have nothing to add. It is a very fearless bird, sitting remarkably close ; and this year a female, at which I had had a snap shot, returned to her nest within a quarter of an hour, although Agapo was engaged at a Kite's nest within 150 yards. I was, of course, lying in wait, and easily obtained her on putting her off the nest a second time.

I have before me an adult male, and a female in immature brown plumage, shot when feeding their young near Granada. One of the nestlings, which, from its size, is probably a male, has a light-coloured breast like the adult male; and the other, probably a female, is dark coffee-coloured, like the mother. This difference in the plumage of nestlings has never, I believe, been previously observed in any of the raptorial birds of Europe, though well known to occur in *Archibuteo sancti-johannis*.

This is *Buteo lagopus* of Machado's and Seoane's lists!

24. BUTEO VULGARIS. "Pella."

Breeds in the wooded districts, and appears to be tolerably abundant.

25. BUTEO CIRTENSIS.

Mr. J. H. Gurney has decided that a young male in my collection belongs to this species, which is probably not uncommon, but is confounded with the preceding.

26. MILVUS REGALIS. "Milano real."

Not rare, but by no means so abundant as the next species. All the eggs of my own taking are both large and richly blotched, and different from the ordinary type, but they were most strictly identified in every instance. The nest is even more fantastically decorated (dirty rags, bones, bits of old shoes, and portions of wasps' nests) than that of *M. ater*; and Shakespeare's warning*, "Where the Kite builds look to lesser linen," is still of practical value in Spain, though, alas! out of date in England.

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* Winter's Tale, Act iv. Sc. 2. [Ooth. Woll. § 313.—ED.]

27. MILVUS ATER. "Milano Negro."

This species, which does not remain throughout the winter, breeds a full fortnight later than the preceding, and the first week in May a patch of wood of an acre or two will certainly yield upwards of a score of eggs, it being a sociable bird. Even when nesting somewhat apart, it has always a colony of Spanish Sparrows to keep it company. The usual number of eggs is two.

28. ASTUR PALUMBARIUS. "Azor," "Gavilan."

Rare in Andalucia; but in the pine forests of the Segura it is not uncommon, and specimens are to be seen in most Museums.

29. ACCIPITER NISUS. "Gavilan," "Cernicalo," Valen. "Esparver."

Generally distributed, breeding in the wooded hills, especially near Granada, whence I have obtained eggs.

30. CIRCUS ÆRUGINOSUS. "Milano," "Arpella."

Abundant all over Spain, it positively swarms in the marshes of the Guadalquivir. Specimens in my collection, selected from a large series, run somewhat smaller and darker than the average from Northern and Eastern Europe.

31. CIRCUS CYANEUS. "Cenizo."

By no means so abundant in the south as the preceding, chiefly occurring in winter.

32. CIRCUS CINERACEUS. "Cenizo."

Resident throughout the year, and tolerably numerous. The generality of males in my series are dark, and two are absolutely black; they are also smaller than specimens from the north.

I can find no confirmation of Dr. Bree's statement, probably copied from Degland, that *Circus pallidus* occurs plentifully in Spain. I never saw a specimen, even in the east of that country, or the Balearic Islands.

33. STRIX FLAMMEA. "Lechuza."

Resident throughout the year, and common everywhere.

34. SYRNIUM ALUCO.

Not uncommon in the higher wooded districts; but I neither saw nor heard it in the Cotos.

35. Athene noctua. "Mochuelo."

This species is generally distributed, and resident. I never saw *A. meridionalis* in any part of Spain.

36. Bubo maximus. "Buho grande."

Resident in every mountain-range. I often saw this species in the Gaitanes, and obtained three young ones from a nest there.

37. Otus vulgaris. "Carabo."

Generally distributed in suitable localities, where it breeds. I have a nestling from Granada.

38. Otus brachyotus. "Carabo."

Not uncommon in winter.

39. Otus capensis.

The first specimen of which I have positive information was obtained near Utrera in November 1867. Lord Lilford writes as follows: "Major Irby found this bird in marshy ground near Casavieja, not far from Vejer, in October 1868, and *there* only. He obtained several specimens, two of which (one living) are in my possession." But the first notice of this bird's occurrence in Spain at all occurs in 'Naumannia,' 1852, translated in Bree's Birds of Europe, vol. i. pp. 134, 135.

40. Ephialtes scops. "Corneta," "Cu-cu."

Very abundant everywhere; and its clear ringing "Kiew" may be heard all night long, even in the centre of Seville. It breeds in holes of trees, notably the olive, in May, and possibly in holes of walls.

41. Jynx torquilla. "Hormiguero," "Torcecuello."

Abundant in spring and autumn. Some remain to breed, as I found its nest at Aranjuez.

42. Gecinus viridis. "Pito real," "Carpintero."

Especially abundant in the cork woods of the Cotos, where it breeds; also in the Tagus valley.

43. Gecinus canus. "Carpintero."

I did not identify this species in the flesh; but I have seen specimens, and believe it to be common, taking the place of the last mentioned in the higher woods.

44. Picus major.

Generally distributed; but the only place where I found its nest was near Aranjuez in May 1870.

45. Picus medius.

Guirao considers this species even more abundant in Murcia than *Gecinus viridis*, especially in the Pine woods of the Sierras de Espuna and de la Pila. I never obtained it myself, but have handled specimens.

46. Picus minor.

I only observed this bird once at Aranjuez, where it was evidently breeding, in May. It is in most collections.

47. Cuculus canorus. "Cucu."

Abundant during the spring passage; but though I once shot a female on 30th April, the largest egg in whose ovary was the size of a pea, yet I never found it laying in Andalucia, nor indeed anywhere else in Spain. Machado, in his list, goes so far as to assert that he never could obtain the bird!

48. Oxylophus glandarius. "Cucu real," "Cucu del moño."

I have obtained this species as early as March 2nd; and a female shot 6th April had an egg ready for exclusion. It is by no means so abundant near Seville as it is near Aranjuez; in both places it prefers the nest of the Common Magpie (*Pica melanoleuca*) in which to deposit its eggs.

49. Coracias garrula. "Carranco," "Carlanco."

Generally arrives early in April, when it swarms throughout the country, breeding in holes of trees, walls, old towers, and also in banks, like the next species, but never in colonies. I once saw a small flock near Jaen on the 13th March, an unusually early arrival. The stomachs of those I examined contained remains of grasshoppers, the thigh-cases of which, having turned the colour of slightly tarnished silver, rather puzzled me at first sight. The brain of this bird is remarkably small.

50. MEROPS APIASTER. "Abejaruco."

Arrives early in April; but I did not find eggs before the middle of May. Almost every bank is tunnelled with their nests; and in the plains they burrow diagonally in the level ground like rabbits. Sacks full are brought into the markets of Seville and Cordova, where, after plucking, they are sold as "Tordos," a general name for Starlings, Thrushes, &c.; and at the "Fonda de Paris" some dozen were one day served up in a pie, the crops containing their insect food being left in, as an improvement, I suppose. The proprietor had that day refused my offer of a fine female Bustard (*Otis tarda*) as being "muy basta" (very coarse); and this want of discrimination called forth some observations "not at all to his advantage."

51. ALCEDO ISPIDA. "Martin pescador."

Resident, but not very numerous.

Degland gives Spain as one of the countries in which *Ceryle rudis* has been obtained; but I have no knowledge of the existence of any authentic specimen.

52. UPUPA EPOPS. "Abubilla;" Valenc. "Put-put."

First arrival noticed on 17th March; leaves in October. The eggs are not deposited till the end of April or beginning of May. It is abundant everywhere.

53. CAPRIMULGUS EUROPÆUS.

I have only obtained one specimen; but Lord Lilford had several brought to him at Seville in May, and considers it commoner there than in the Castiles.

54. CAPRIMULGUS RUFICOLLIS. "Zamaya," "Engaña-pastores," "Chota-cabras."

Arrives in May, and is always to be found in the Pine woods near Seville. The eggs, two in number, are, as a rule, a trifle larger than those of the preceding species; but they vary so much that unidentified specimens are valueless. This species enjoys the same evil reputation for sucking the teats of goats and cows; but I never yet found a Spanish peasant who was idiot enough to class it with the Hawks, as many of our English gamekeepers do its congener.

For the benefit of any one who may refer to Machado's list, I may observe that the whole of the description at p. 16, under the head of *C. europæus,* has by a typographical error been separated from *Hirundo urbica,* to which it evidently applies.

55. CYPSELUS MELBA. "Avion."
Arrives in March, and breeds in colonies in the mountains, notably near Alora.

56. CYPSELUS APUS. "Avion;" Valencian, "Falsia."
Abundant in spring and summer.

[To be continued.]

V.—*On the Ornithology of Algeria.*

By J. H. GURNEY, Jun., F.Z.S.

ON the 25th of January, 1870, I disembarked at Oran, the chief town of the western province of Algeria, and a few days afterwards moved on in a coasting-steamer to Algiers. Before setting out for the Sahara, I devoted a month to collecting in the Tell*, principally in the vicinity of Blida and Miliana; and it was not until the 1st of March that I finally started for the interior.

The first caravanserai, properly so called, is Bougzout; the second is Ain-Oussera; the third, Guelt el Stel. The water at all these places is barely drinkable. On the 22nd of March I arrived at Laghouat, the last French outpost, the first oasis of the Sahara, a picturesque spot by reason of its tall Palms. To the northward stretch plains as far as Djelpha. Rocky mountain-ridges protect this oasis from the wind, which frequently blows the sand in overwhelming clouds.

On the 9th of April I started for the Mzab country. My camel unfortunately took fright the first night at some Ravens, and deserted me, so that for ten days I was without arsenical soap. But it is not necessary to recount all the incidents of the journey. I must, however, mention the dayat* of Tibrem. In 1857 Dr. Tristram found in this dayat no less than "seven pairs of Golden Eagles, each of which had their nest" (Ibis, 1859, p. 283). Being undisturbed they were perfectly fearless, and he "twice walked under a tree and brought down a fine specimen with No. 7 shot." The Eagles have gone; but never shall I forget the throngs of birds which teemed wherever there was water—Pied Flycatchers (*Muscicapa luctuosa*), Hoopoes (*Upupa epops*), Woodchats (*Lanius auriculatus*), Rollers (*Coracias garrula*), Moorish Magpies (*Pica mauritanica*). Every tree of any size had not one, but several nests. As we rode along, Ravens (*Corvus corax*), Egyptian Vultures (*Neophron percnopterus*), and Kestrels (*Falco tinnunculus*) flew before us, mingling with noisy Shrikes (*Lanius algeriensis*) and groups of startled Sandpipers.

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* I cannot better define "the Tell" than in the words of Dr. Tristram. He calls it "the corn-growing country from the coast to the Atlas" (Ibis, 1859, p. 277).

I saw many birds which I did not know; but we could not stop to secure specimens of them. On the fourth day we saw the wished-for landmark of the Mzab town of Berrȳan. From that place, after resting three days, we travelled to Gardaia, which is the chief city of the Mzab confederation. Standing on a gentle eminence crowned by the never-failing mosque, its flat-roofed houses rising tier above tier, amongst ever-green Palm trees, Gardaia, once seen, is not to be forgotten.

Her gardens are very extensive; and nothing can surpass the glorious luxuriance of her vines, trained from Palm-stem to Palm-stem. Every Fig- and Peach- and Apricot-tree was loaded with green fruit, giving promise of an abundant harvest; and when the broken rays of the evening sun shed "a golden pathway" through the mass of foliage, the effect was superb.

As might be expected, so rich an oasis affords food and shelter for many species of birds. The Egyptian Turtle-dove (*Turtur ægyptiacus*) is so common that one has only to take one's stand in a garden and load and fire until enough have been shot. On every well and gateway sit Pallid Shrikes (*Lanius dealbatus*); and in the city itself the House-Bunting (*Fringillaria saharæ*) chirps defiance from the flat roofs of the houses.

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* Dr. Tristram defines a dayat as "an unimprovable oasis, in which there is no constant supply of water to be found at any depth" (Ibis, 1859, p. 278).

We got back to Laghouat on the 3rd of May; and as the heat had then become so intense that no European could venture out in the middle of the day without danger of a sunstroke, I left for Algiers almost immediately, and thence returned to England by the usual route.

I will now mention what has been written on the birds of Algeria. The first work seems to be Malherbe's 'Catalogue raisonné d'Oiseaux d'Algérie,' 1846. The bird part of the 'Exploration scientifique d'Algérie pendant les années 1840, 1841, 1842,' did not appear until 1867, though some of Gen. Levaillant's plates were issued so much earlier than the letterpress that Malherbe was able to quote them. Loche's 'Catalogue des mammifères et des oiseaux observés en Algérie' came out in 1858. Intended as a guide to the natural-history department of the "Exposition permanente" at Algiers, it was in some measure the foundation of the two volumes of letterpress of the 'Exploration Scientifique,' which were printed (under the superintendence of his widow) after Capt. Loche's death in 1863. A Swiss collector has purchased his birds; but his fine collection of eggs is still to be disposed of. A year prior to the publication of this useful catalogue, Dr. L. Buvry's "Mittheilungen aus Algerien" appeared in the 'Zeitschrift für allgemeine Erdkunde' for 1857. Immediately afterwards an important contribution was made to 'The Ibis' in the shape of an article by Mr. Salvin, entitled "Five months' Bird's-nesting in the Eastern Atlas" (Ibis, 1859, pp. 174–191, 302–318, 352–365), and others "On the Ornithology of Northern Africa," by Dr. Tristram (Ibis, 1859, pp. 153-162, 277–301, 415–435; 1860, pp. 68–83, 149–165, 361–375), who had successfully penetrated the Great Sahara, where probably no European had been before him. These papers are replete with information, and are illustrated by plates of *Falco barbarus, Saxicola philothamna,* and *Ruticilla moussieri.*

In the 'Journal für Ornithologie' for January 1870, there is an article, which I have had translated, on the birds of the province of Constantine, by M. Taczanowski, enumerating 210 species; and there is another on the birds of the same province by M. Labouysse in the 'Annales de la Société d'Agriculture de

Lyon,' 1853. With the exception of the zoological appendices to Wagner's 'Reisen in der Regentschaft Algier,' Tristram's 'Great Sahara,' and Harcourt's 'Sporting in Algeria,' the above are all the works on the birds of Algeria which I know of; and the following list, which treats chiefly of the habits of the birds I saw, may be considered as supplementary to them.

I include only those species which actually came under my observation. In the few instances in which the birds were not shot, they were seen so near as to leave no doubt in my mind as to their identity. I think that in general the custom of identifying birds on the wing, when visiting a new country for the first time, is unsafe.

By my father's advice, I have adopted the classification of Gould's 'Birds of Europe,' inserting the non-European species in the order in which they appear in the museum at Algiers.

I have only to add that my best thanks are due to Dr. Tristram, Mr. Salvin, and Mr. Sharpe for the assistance they have rendered me in preparing my notes for the press, and to my father for revising and correcting them.

1. GYPS FULVUS (Gm.). Griffon Vulture.

One Sunday at Laghouat, happening to be out for a stroll, I observed twelve birds at a distance, which I recognized as Vultures, circling round a mountain. When I got nearer I could only count eleven; and while I was wondering what had become of the twelfth, it leisurely walked out from behind a large stone, at not more than fifty paces from where I was standing. This was the nearest I ever approached to *Gyps fulvus,* though I often saw birds of this species at a distance.

2. NEOPHRON PERCNOPTERUS (Linn.). Egyptian Vulture.

Both in ascending and descending, the Egyptian Vulture usually flies in circles. Like most other birds of prey, it rarely flaps its wings, but with pinions motionless, slightly upturned at the tip, it scans the surrounding country from an enormous height, receding rapidly from the eye, yet appearing to fly but slowly. The nearer the ground, the smaller are the circles, and the more lowered is the inner wing; in fact when about to settle, the bird is nearly sideways, the point of one wing appearing to be directly beneath the point of the other. It walks with long strides, but not fast, stooping first on one side and then on the other. At Tibrem I saw Egyptian Vultures of all ages, but did not succeed in obtaining a specimen, though I was more than once within shot.

3. AQUILA CHRYSAETOS (Linn.). Golden Eagle.

At Bouffarik I saw a dead specimen.

4. BUTEO DESERTORUM (Daudin). African Buzzard.

Buzzards were often seen at a distance. I got within fifty yards of one, not far from Sidi Maklouf, sitting on the edge of its nest. It was as red as any Kite, and must certainly have been *B. desertorum.* Kites were also frequently seen, and once or twice a Falcon. I purchased a live Lanner of a Zouave at Laghouat, which is now in the Zoological Society's Gardens in the Regent's Park.

To show how rich this country is in Raptores, I may mention that Capt. Loche enumerates no less than 37, nearly all of which are resident species.

5. TINNUNCULUS ALAUDARIUS (G. R. Gray). Kestrel.

Common.

6. CIRCUS ÆRUGINOSUS (Linn.). Marsh-Harrier.

At Laghouat, I am sorry to say, I missed a fine specimen.

7. CIRCUS CYANEUS (Linn.). Hen-Harrier.

I observed a fine pair of the Hen-Harrier, which is not included in Dr. Tristram's Sahara list (Ibis, i. p. 277), haunting some rushes and an Arab's garden at Laghouat. They were remarkably tame for Hawks; I shot the female, and crept up to within 40 yards of the male as he was preying upon a bird; but having only No. 11. shot in my gun, he escaped. Egypt was the only locality in Africa from which my father had previously seen the Hen-Harrier.

8. STRIX FLAMMEA (Linn.). Barn-Owl.

At Algiers I shot one specimen, but saw no others.

9. SCOPS ZORCA (Bp.): *Scops giu* (Scopoli). Scops Owl.

The Scops Owl resembles the Little Owl in its flight, but it has a much more attenuated appearance when perched, except when it is asleep, when all the feathers are so puffed out that the head is undistinguishable from the body. It was much less common than *Athene persica* in the parts I visited; and Taczanowski mentions having seen only a single example.

10. ATHENE GLAUX (Sav.): *Athene persica* (Vieill.): *A. meridionalis* (Risso): *A. numida* (Loche ?): Athenian Owl, Gray, Gen. B. fol. sp. 44.

These day-Owls sit openly exposed amongst rocks in the high and shelving banks of the Chalif; when frightened they take refuge in crevices, whence it is almost impossible to dislodge them. Their power of crouching aids them in squeezing into small holes, and creeping through narrow apertures. At Guelt el Stel and Laghouat their hooting was heard every evening almost before the sun went down. I cannot say whether they keep up their doleful melody all the night; but I used to hear them again at daybreak. They feed on beetles. As I learn from my father that this is unquestionably the Sacred Owl of Athens, I use the English name of "Athenian Owl" in preference to "Algerian Little Owl" or "Southern Little Owl." Taczanowski (in the list referred to at the head of this paper) says that those seen in the desert are generally lighter in colour than those met with on the coast.

11. CAPRIMULGUS RUFICOLLIS, Temm. Red-necked Goatsucker.

On the 8th of April, about 6 P.M., at Guelt el Stel, I saw three birds which I suppose were of this species. They were evidently preying upon young locusts, with which the ground was so perfectly covered in places as to appear black at a little distance. I saw them (apparently) pick up several insects from the ground. The previous evening a specimen had been given me at Ain el Ibel, where the coach stopped. A sportsman brought it in alive, remarking that it was the only thing he had shot.

12. CYPSELUS APUS (Linn.). Swift.

There were immense numbers of Swifts at Algiers on my return from the Sahara.

13. Hirundo rustica, Linn. Swallow.

Although I was not guilty of shooting a Swallow, I include it in my list for the sake of saying that it is a mistake to suppose that this bird or any of the European Hirundinidæ except *Cotyle rupestris* (the most stay-at-home of all that family) pass the winter in Algeria. It was not until the end of February that I first observed the Swallow; and I am convinced that few, if any, remain throughout the year. "The natives," says Dr. Tristram, "are perfectly familiar with the fact of the migration of vast flocks to the south, which all go, as they say, to Timbuctoo, the El Dorado of Arab and Swallow" (Ibis, 1859, p. 434). On the 26th and 27th of March we experienced a very cold wind at Laghouat; so benumbed were the poor Swallows that hundreds might have been killed with stones. The poor birds were to be seen sitting about in all directions. I am inclined to think they were suffering from cold, rather than the want of insect food. Insect life appeared to me to be always abundant.

14. Cotyle rupestris (Scop.). Rock-Swallow.

I noticed a considerable difference in size in specimens shot near the ravine of La Chiffa.

15. Chelidon urbica (Linn.). House-Martin.

First seen flying over the barracks at Blida on the 17th of February. On the 18th they were repairing their old nests at Miliana. The cold wind of March 27th so far affected them that I found many in the early morning upon the sand, and others clinging to the mud-brick walls which partition off the gardens. I caught some with my hat, which will give an idea of their extreme feebleness. At Guelt el Stel they nest in the mountains.

16. Cotyle riparia (Linn.). Sand-Martin.

Common in summer.

17. Merops apiaster, Linn. Bee-eater.

Arrives in flocks about the 1st of April. In their buoyant and graceful flight they are not unlike Martins. It is when descending that the resemblance is especially seen. Few birds surpass the Bee-eater in beauty as it glides nearly motionless through the air (except when a momentary rapid beating of the wings is necessary to gather impetus), or hawks in the sunshine for wasps.

18. Merops superciliosus, Linn. Egyptian Bee-eater.
M. persicus, Pallas.

On the 21st of April I saw an Egyptian Bee-eater in one of the cemeteries* at Gardaia, which proved to be of this species. I afterwards came upon a flock of them lying upon the large stones which are scattered about wherever there are no gardens. I saw them also on walls, and on the fence-work upon the town-wall; and returning I found the cemetery, where I had seen the first solitary bird, occupied by about a dozen. They were perfectly tame; and I thought I had never seen a more interesting sight than these sparkling birds as, one after another, they rose into the air to hawk for insects, and, returning, perched upon a tombstone within a few yards, perhaps, of where I was standing. They have only one note; it is loud and rather harsh, like the Common Bee-eater's. Their flight is slower, but even more gliding, with the wings very much raised, except when the birds are high in air, when they appear to be more depressed. They almost lie upon stones and walls, as if unable to sit upright on account of their long tails and short legs. The Bee-eaters have a remarkably small brain.

19. Upupa epops, Linn. Hoopoe.

It was not until the 13th of March that I noticed a Hoopoe. At the close of that month considerable numbers arrived with other migratory birds. Though four were sometimes seen together, they were all paired; and it seems probable that most migratory birds pair *en route* or before leaving their winter quarters, though in some species the males precede the females. When feeding, the bill and crest bear some resemblance to the head of a hammer, as the Hoopoe moves its head up and down with regularity, about once every second. Weak as is their flight, they can go at a good pace; and though generally seen upon the ground, they perch freely. This is a difficult bird to skin well.

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* The tombstones in the cemeteries, which are large and numerous in the Mzab country, and generally just outside the walls, consist of unhewn stones stuck on end, and a few white "marabouts." Nearly every tomb is garnished with a row of urns; and the "marabouts" are sometimes ornamented with ostrich eggs.

20. **Coracias garrula**, Linn. Roller.

The first seen was perched upon a headless Palm, in the oasis of Gardaia. It screamed loudly when wounded, and was most tenacious of life. I have a note that I saw one at Tibrem attack an Egyptian Vulture.

21. **Muscicapa atricapilla**, Linn. Pied Flycatcher.

It was not until April that I saw this species, after which it became common. In the dayats and at Gardaia, where they most abounded, the proportion of adult males in full summer plumage to young birds and females, was as one to five. They look exceedingly picturesque in the rich foliage of the oases, clinging, perhaps, to a rough Palm-stem, though their more common perch is the upper bough of a bush, whence they dart off after passing flies, in the manner of *Butalis grisola.*

22. **Butalis grisola** (Linn.). Spotted Flycatcher.

Common in summer.

23. **Telephonus erythropterus** (Shaw): *T. cucullatus* (Temm.). Hooded Shrike.

Has a wavering uncertain flight. Its powers of wing are probably very limited. The least breath of wind blows up its long tail; hence it generally keeps close to the ground. It perches in a feeble manner, as if its legs could not support it. The only one I shot was on the 6th of February as it flew from a small but thickly matted bush near the sea, far away from any trees. The previous fortnight there had been several in the poultry-market at Algiers.

24. **Lanius algeriensis** (Less.).

Shy and hard to kill. Goes as far as Laghouat; but about a day's journey south of that town the next species takes its place.

25. **Lanius dealbatus** (De Fil., *nec* Bp.). Bleached Shrike.
Lanius pallens (Cass.)*.

While I was at Gardaia a great flight of locusts passed over the city, and the White Shrikes fed upon them. This tamest of birds is very common in the Mzab country. No clump of trees, or dayat, is without its pair. The young are fully grown by the end of April; they infest every garden, preying upon the swarms of coleoptera which a high degree of moisture fosters; and, from their habit of not immediately eating what they catch, they are generally seen with something in their mouths. A favourite perch is the bottom of the crest of a Palm where the fronds are broken short, whence they can easily dart off to snatch a passing beetle, or rise into the air after a more high-flying locust. The Pallid Shrike's is a laboured flight, slow, but with very rapid beating of the wings. Its note is loud and sharp. It can mimic other birds; I have heard a young one utter notes which were the exact counterpart of those of the Desert-Bullfinch (*Carpodacus githagineus*).

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* [Qu. *L. lahtora*, Sykes? *Cf.* Dresser & Sharpe, P.Z.S. 1870, p. 595.—Ed.]

26. Lanius auriculatus, P. L. S. Müller. Woodchat.
L. rufus, auct.

A common summer migrant, especially abundant on the wooded hill-sides between Boghar and Medea, and nearly as common in the Sahara. It settles upon fallen wood, and sometimes amongst the young wheat grown in the oases of Laghouat, as well as tenanting many a solitary bush far away from habitations. Though generally seen upon an upper bough, it is a much less demonstrative bird than the Grey Shrike. It will sit with its mate on some slender stalk, shaking itself up (like a young bird) and vibrating the wings rapidly, but with no motion of the tail, until startled off. Its flight is nearly direct, but rather laboured than swift. It is, on the whole, rather a mute bird, but utters a kind of shriek when shot, and bites hard.

27. Oriolus galbula, Linn. Golden Oriole.

Four seen together at Chiffa. Is rather a shy bird, but said to do well in captivity.

28. Turdus merula, Linn. Blackbird.

Common, but very shy.

29. Turdus torquatus, Linn. Ring-Ouzel.

At Guelt el Stel.

30. TURDUS MUSICUS, Linn. Thrush.

Common.

31. CINCLUS AQUATICUS, Bechst., var. MINOR, Tristr. (Ibis, 1870, p. 497). Algerian Dipper.

Dr. Tristram informs me that he never met with the Dipper in Algeria; and M. Loche is believed to have only obtained two. Upon a stream near Blida I met with four or five, but only shot one, not being then fully aware of the interest attached to this bird. My specimen (which is in Dr. Tristram's collection) differs slightly from *Cinclus aquaticus,* as pointed out (Ibis, *l. c.*).

32. CRATEROPUS FULVUS (Desf.).

My own observations so exactly corroborate those of Dr. Tristram on this bird, that to give them would be a repetition. If two *Crateropus fulvus* are seen on the ground, when fired at, five or six others appear, and the flock fly off in an irregular line. Beetles, flies, and grain constitute the principal food of this bird. The colour of the iris is grey, and I can corroborate Dr. Tristram's remark (Ibis, 1859, p. 420) that "the sexes are alike in plumage." The same writer states that the Arab name is "Erbib el Hadjel," *i. e.* the adopted son of the Partridge.

33. PYCNONOTUS BARBATUS (Desf.). Dusky Ixos or Dusky Bulbul.

These birds get up in a wood in "coveys" of eight or ten, like a party of young Jays from thick scrub and brambles. Their Jay-like flight is as different as possible from that of the shy but active Blackbird; and when once flushed they no longer seek to bury themselves in the foliage, but perch in the most exposed situations. From among the feathers of the occipital region of one which I shot at Oued el Alleg grew a few very slender filaments, divided into branches, and about ¾ inch in length.

34. PETROCINCLA CYANEA (Linn.). Blue Thrush.

At La Chiffa.

35. DROMOLÆA LEUCURA (Vieill.). Black Wheatear.

I shot a few Black Wheatears at Boghari; but at Guelt el Stel they were common. They seem always to be on the look-out from the top of a rock or stone; if they fly down for an instant, it is only to return to their former elevated position; but they render themselves conspicuous by this habit. As the eye wanders over the dreary landscape, it is a relief to see them. It is astonishing how far one may see a cock *D. leucura* spreading his tail upon a grey rock on a bright May morning. This raising the tail at right angles with the back, and spreading it out to its full extent, is the principal amusement of the male in the spring, and of the female also. I have found black and white beetles &c. inside them.

36. DROMOLÆA LEUCOPYGIA (Brehm). White-rumped Rock-Chat.

Common in the oases at Gardaia, not actually in the gardens, but all about the "weds" (*i. e.* dry rocky watercourses), and on the wells, where I suspect they breed. They also enter the town freely, to perch upon the flat-roofed houses. Their flight is slightly undulating.

37. DROMOLÆA LEUCOCEPHALA* (Brehm). White-headed Rock-Chat.

One of these bold and handsome birds flew into the courtyard at Berryan, and, settling upon the floor, began to peck at a rotten pomegranate which I had rejected. In the afternoon he returned again, and took another berry. We afterwards found the species plentiful, in exactly the same localities as *D. leucopygia*; and, from having killed a brace of the latter with a few white feathers on the head, I should say that these two species are very near akin.

38. SAXICOLA PHILOTHAMNA (Tristr.). Bush-Chat. Ibis, i. p. 299, pl. ix.

Many pairs seen at Tibrem, but never in the stony Chabka Myat. This is a large bird, holds itself upright, and has the habit of raising the tail, common to the rest of the tribe. I did not see them near a dayat, but in the level prairie land, where flocks and herds pasture. From being unmolested they have learnt to hop among the Arab tents, feeding upon what they find among the small stones &c.

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* [See *antea*, p. 53.—ED.]

39. Saxicola œnanthe (Linn.). Wheatear. Yarrell, B. B. i. p. 253.

Common.

40. Saxicola stapazina (Linn.). Russet Wheatear. Gould, B. of E. ii. p. 91.

This seems to be the Chat which is found in the Tell in summer, and of which I obtained one specimen only in the Sahara. It frequents the sea-shore at Algiers, and not the dunes only, but also the rocks by the edge of the water. Its flight is just like that of *S. œnanthe*; it goes from stone to stone with expanded tail; and when it has selected a perch, it remains motionless some time, though not always facing the intruder. It can perch with equal ease upon a stalk or house-top, and even hover for a few seconds in the air. The same pair appear to keep near the same spot for days.

41. Saxicola lugens (Licht.). Mourning Chat. Gould, B. of E. ii. p. 89.

It was only on the dreary route between Gardaia and Berrȳan, where there is scarcely a particle of herbage to harbour insects, that I observed this bird, except in one instance, when I shot a specimen at Mellika; and it would seem that, unlike its congeners, *Dromolæa leucopygia* and *D. leucocephala*, it but rarely enters oases. On the Berrȳan route many pairs were seen, mingled, though not actually consorting with, a few *S. deserti*.

42. Saxicola deserti (Rüpp.). Desert-Wheatear.

Seems to be the most universally distributed in the Sahara of all those Chats which usually occupy a very limited area. *Dromolæa leucura* is found in the mountains; *D. leucopygia* and *D. leucocephala* affect the oases; *S. lugens* inhabits the stony Chebka Mzab, and *S. philothamna* the wide rolling prairie. But *S. deserti* is a great exception. It is abundant from Bougzoul to Gardaia, adapting itself to the food found in the Mzab and the Hauts Plateaux. All across the Algerian Sahara it was seen repeatedly, giving utterance to its lively song, which can be heard at a great distance (though not further than the notes of some of its congeners). Its flight is moderately swift, but not direct. Its tail is never still a moment; and, as in the other Wheatears, the jerking action is always accompanied by a slight vibrating motion of the wings.

The ratio of females to males is as one to eight. In other countries a similar disproportion has been noticed; and some observers have been led to state that the sexes were alike. A specimen shot in March had the black feathers of the throat all tipped with grey—the remains of its winter plumage, I presume.

43. SAXICOLA HOMOCHROA (Tristr.). Solitary Chat.
Identified for me by Dr. Tristram.

44. PRATINCOLA RUBETRA (Linn.). Whinchat.
Common.

45. PRATINCOLA RUBICOLA (Linn.). Stonechat.
Common.

46. RUTICILLA PHŒNICURA (Linn.). Redstart.
Common after the 27th of March.

47. RUTICILLA TITHYS (Scop.). Black Redstart.
Algiers and Blida.

48. RUTICILLA MOUSSIERI (Olph Gaillard). Moussier's Redstart.

I obtained a fine male of this species in a ploughed field at Miliana, upon an offshoot of the Little Atlas, 700 metres above the sea. It was alone, not far from a path by which ran a small stream of water; I also shot two females at the foot of the hills, where the soil was sandy. Its occurrence at Miliana was interesting, as Dr. Tristram had considered Boghar to be its extreme northern range in the western part of Algeria. There I also got a specimen, high up again in the mountains; but it was not until I arrived at Guelt el Stel that I found the species plentiful. At this place a good many trees grow, and I observed that these birds perched freely on them; but I have also seen the Stonechat on a tree. In the Mzab country I did not see any, strange to say.

R. moussieri is a shorter, stouter bird than *R. phœnicura*, hence it cannot hop or fly nearly so quickly, except when pursued. I think its flight is even slower than a Stonechat's; and it seldom flies far without perching on a stone, clod, or small bush, where it moves the body up and down like *R. phœnicura. R. moussieri* jerks the tail sometimes, but never so rapidly as *R. phœnicura.* When feeding, it digs its bill into the ground very frequently, and looks round after each dig, with the pert air of a Robin. They pair in March; and the males look very pretty as they chase the females among the bushes and rocks. As this bird occupies such a dubious place between the Chats and the Redstarts, I was anxious to see which of its actions corresponded with the former and which with the latter. They were quite tame at Guelt el Stel, and I had abundant opportunities of watching them. At that time the black of the back was still edged with brown. Bill black; mouth yellow; eye dark brown; legs, feet, and claws black; soles of feet rather lighter. Length of tongue $\frac{3}{8}$ inch, arrow-shaped, with the tip slit. Food small beetles, small caterpillars, &c.

49. Cyanecula leucocyanea, Brehm. Blue-throated Warbler, White-spotted Bluethroat.

This Bluethroat, which was pretty common at Laghouat, seems only to show itself on being frightened, when it seeks the cover of rushes. It prefers young wheat and reedy places, and as a rule does not perch on trees.

There is but little of the Redstart in its habits. I frequently saw the two species at the same time (though never consorting); and a greater contrast it would be difficult to imagine.

50. Erithacus rubecula (Linn.). Robin.

When I arrived in February there were hundreds of Robins in the Algiers poultry-market; but whether the bird is any thing more than a winter visitant I cannot say.

51. Calamodus schœnobænus (Linn.). Sedge Warbler. Laghouat.

52. Calamodus aquaticus (Lath.). Aquatic Warbler.

This Warbler is not included in Dr. Tristram's list; but I found it, together with the Sedge Warbler, in the small half-dry marsh at Laghouat which I have so often had occasion to mention. The two species live together, and their habits are quite similar.

53. Aëdon galactodes (Temm.). Rufous Sedge Warbler.

Has a curious habit of cocking its tail. It is hardly ever seen in any other position. Our common British Nightingale has the same habit in a less degree; but with the Rufous Sedge Warbler it appears to be the natural posture to keep the tail elevated; in motion or at rest, it is only depressed at intervals. As I saw scores of these birds on my return from the Mzab country (in May), where there had not previously been one, I conclude that the species is a summer migrant. Though called by the name of "Sedge Warbler," it is any thing but an aquatic bird.

54. Cisticola schœnicola (Bp.). Fantail Warbler.

In the marsh at Laghouat, in small flocks. The inside of the mouth is black in the male.

55. Cettia sericea, Natt. *Potamodus cettii* (Marm.). Cetti's Warbler.

Is found equally in woods and in gardens, but always near a ditch. Even in February it may be heard singing from the heart of a bramble bush. Legs flesh-colour; inside of mouth yellow; eye dark brown. In appearance this bird seems intermediate between a Whitethroat and a Wren.

56. Philomela luscinia (Linn.). Nightingale.

The first Nightingale I saw rose out of a field of young wheat! Later on they were plentiful, and one would, perhaps, hear three or more singing at a time. The bird utters a hoarse croak if any one is in the vicinity of its nest, but does not then swell out the throat, which action, I suppose, always accompanies its well-known song. The nest is made (in Algeria) of dead leaves and large pieces of the stalk of a rush, but lined with finer material. Some young ones found on the 21st of May scarcely showed any feathers, but were able to see.

Clinging sideways to any bough, the Nightingale can turn head and body with equal facility, then pausing, right itself, as it slowly raises its tail, at the same time drooping its wings until they nearly meet at their points.

57. Sylvia orphea, Temm. Orphean Warbler.
Tibrem.

58. Sylvia atricapilla (Linn.). Blackcap.
Very abundant about Algiers in February, and perhaps in summer also; but it is difficult to see small birds when the trees are in leaf. It is equally common at Miliana, where I counted thirteen birds on one tree.

59. Sylvia hortensis (Gmel.). Garden Warbler.
Only one shot.

60. Sylvia melanocephala (Gmel.). Black-headed or Sardinian Warbler.
Manifests great alarm when it has not even finished building its nest. The female, with trailing wings, utters incessantly a low but angry note within two feet of the intruder; while the male (hardly opening his wings) leaps from twig to twig, making the small boughs shake, and in the extremity of his resentment essays to erect a few small feathers in imitation of a crest. They fly with their tails spread, but close them on alighting. Some females are darker than others, especially about the head. I shot a male with a few white feathers appearing in the crown.

61. Sylvia subalpina (Bp.). Subalpine Warbler.
Two in the Mzab and one at Tibrem.

62. Sylvia cinerea, Lath. Whitethroat.
Laghouat.

63. Sylvia conspicillata, Marm. Spectacled Warbler.
Tibrem.

64. Melizophilus undatus (Bodd.). Dartford Warbler.
Oran and Algiers.

65. Phyllopneuste trochilus (Linn.). Willow Wren.
Abundant nearly everywhere. Towards the end of March the multitudes which winter in the Tell migrate northwards and give place to others. Though I frequently thought I heard the Chiffchaff, the birds on being shot nearly always proved to be Willow Wrens. I am convinced that the true Chiffchaff is far

less common than the allied species, not only in Algeria but also in England.

66. Phyllopneuste rufa (Lath.). Chiffchaff.
One shot at Laghouat.

67. Phyllopneuste sibilatrix. Wood Wren.
Mzab.

68. Regulus cristatus (Linn.). Golden-crested Wren.
Algiers.

69. Troglodytes parvulus, Koch. Wren.
Algiers and elsewhere.

70. Anthus pratensis (Linn.). Meadow Pipit.
Common.

71. Anthus campestris, Bechst. Tawny Pipit.
In some places the soil of the Sahara is soft and sandy, in others hard and pebbly. The Tawny Pipit affects the former where there is little or no herbage. It appears to be a very solitary bird and not common. Its flight is undulating, like that of the Wagtail; and, like the latter, it twitters on the wing.

72. Anthus arboreus, Bechst. Tree Pipit.
Common in Summer.

73. Motacilla alba, Linn. White Wagtail.
Universally distributed during the spring and winter, but, on the whole, commoner in the Tell than in the Sahara. On one occasion I observed a large flock on a newly ploughed field. They are decidedly gregarious at certain seasons. Numbers were seen one evening at Laghouat, settling to roost in a wet field of wheat. Though it was not later than the 26th of March, many were still in winter plumage.

74. Budytes flava (Linn.). Grey-headed Yellow Wagtail.
In the Tell I now and then saw specimens of this Wagtail, but could not get near them. At Laghouat it was quite common, in flocks, apparently on passage, the birds being comparatively tame.

75. Motacilla boarula, Lath. Grey Wagtail.
I saw what, I have no doubt, was this species, at Oran.

76. Parus major, Linn. Great Tit.

Not uncommon.

77. Parus ultramarinus, Bp. Ultramarine Tit.

These birds look as bright as Kingfishers, when the sun is shining on them. It might be expected that the southern climate, which has so far heightened their colour, would produce a corresponding diversity of habits and actions, as compared with our own familiar species, *Parus cæruleus*; and I think it is partially the case. Taczanowski also remarks that this Titmouse has a different voice. It goes as far south as Laghouat.

78. Parus ledoucii, Malh. (Plate III.)

I only obtained this species at Miliana, where I observed two pairs on the low trees upon the sides of the mountains. I did not then distinguish them from the Cole Tit (*Parus ater*), with which their habits and actions appeared to agree. The specimen in the Algiers Museum was killed at Beni Slimam. Taczanowski notes that it is found "only in Pine forests. The habits and the voice of this bird are similar to those of our *Parus ater*." Mr. Salvin has no note upon the species; nor was it ever met with by Dr. Tristram.

[To be continued.]

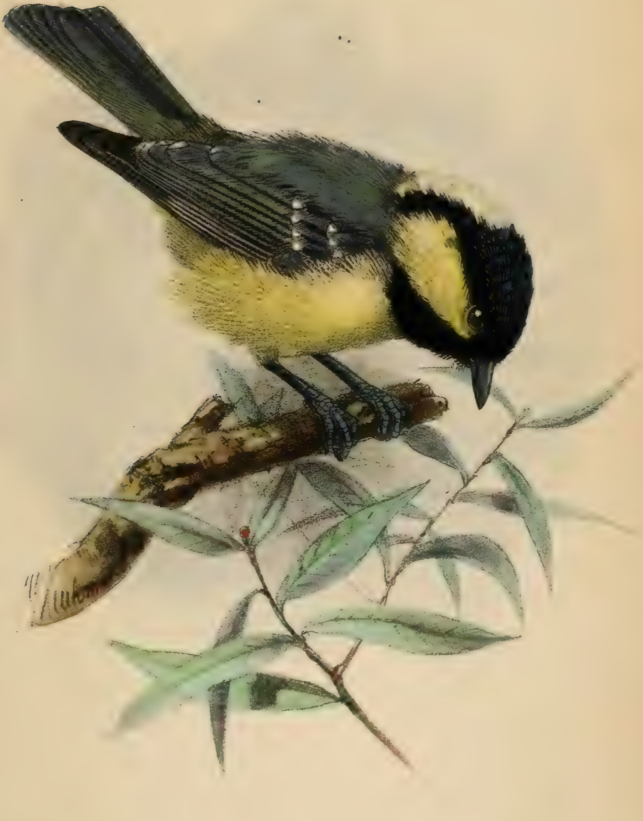
VI.—*On the* Psittacidæ *of Central America.*

By Osbert Salvin, M.A., F.L.S., F.Z.S., &c.

(Plate IV.)

Having recently received, in a collection from Veragua, two Parrots, one of which is apparently quite new to science, and the other new to the fauna of Central America, I take the opportunity of shortly reviewing such members of the family *Psittacidæ* as are found between the Isthmus of Darien and the northern confines of the South-Mexican avifauna.

The *Psittacidæ* having been so recently treated in Dr. Finsch's admirable volumes 'Die Papageien,' wherein the intricacies of their synonymy are carefully investigated, it is quite unnecessary in the present paper for me to retraverse this portion of the subject. I have therefore merely given references to Dr. Finsch's



J. G. Keulemans lith. [illegible]

PARUS LEDOUCII

work, and passed on to such supplementary notes as are called for by later observations.

These notes relate almost entirely to the geographical distribution of the various species found within my limits, some of them being from personal observation, made during my visits to Guatemala. Specimens of nearly all the species mentioned are in the collection formed by Mr. Godman and myself.

All the great American groups of this family are well represented in Central America, the number of species being, in all, twenty-seven†. These belong to nine genera, and the following Table shows briefly how they are distributed over the different sections of the great Isthmus.

		S. Mexico.	Guatemala.	N. Honduras.	Nicaragua.	Costa Rica.	Veragua.	Panama.	Darien.	S. America.
1.	Ara militaris	*	. .	. .	. .	*	*	*	*	*
2.	—— macao	?	*	*	. .	*	. .	*	. .	*
3.	—— chloroptera	. .	. .	. .	. .	. .	. .	*	. .	*
4.	—— ararauna	. .	. .	. .	. .	. .	. .	*	*	*
5.	—— severa	. .	. .	. .	. .	. .	. .	*	*	*
6.	Rhynchopsitta pachyrhyncha	*								
7.	Conurus finschi	. .	. .	. .	. .	. .	*			
8.	—— holochlorus	*	*							
9.	—— petzi	*	*	*	*	*				
10.	—— ocularis	. .	. .	. .	. .	. .	*	*		
11.	—— aztec	*	*	*	*					
12.	—— hoffmanni	. .	. .	. .	. .	. .	*	*		
13.	Brotogerys tovi	. .	*	*	. .	*	*	*	. .	*
14.	Bolborhynchus lineolatus	*	*	. .	. .	*	. .	. .	. .	*
15.	Pionus senilis	*	*	. .	. .	*				
16.	—— menstruus	. .	. .	. .	. .	. .	*	*	. .	*
17.	Caica hæmatotis	*	*	*	. .	*	*	*		
18.	Chrysotis albifrons	*	*	*	. .	*				
19.	—— xantholora	. .	. .	*						
20.	—— finschi	*								
21.	—— diademata	. .	. .	. .	. .	*	*	*	. .	*
22.	—— autumnalis	*	*	*						
23.	—— guatemalæ	*	*	*	. .	*	*	*		
24.	—— auripalliata	. .	*	*	*	*				
25.	—— ochrocephala	. .	. .	. .	. .	. .	*	. .	. .	*
26.	—— levaillanti	*	*							
27.	Psittacula cyanopyga	*								

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† Other species are placed in Mr. G. R. Gray's Hand-list with Central American localities assigned to them; but these, unconfirmed by recent

No species of Parrot, except *C. carolinensis*, passes into the northern continent beyond the limits of southern Mexico. Indeed so strictly is the northern range of the family defined, that, were it not for this single exception, no more absolute definition of the northern limit of the Neotropical region (the Austro-Columbian region of Huxley) could be given than that of the northern extension of the *Psittacidæ* in Mexico.

Central America has, as of all other groups of birds, a number of Parrots peculiar to itself. Some few species, and amongst these the Maccaws especially, range widely over the southern continent. Still both Mexico and Guatemala are rich in peculiar species; and Costa Rica and Veragua are not deficient in this respect.

1. ARA MILITARIS (Linn.).

Sittace militaris, Finsch, Papag. i. p. 396, ii. p. 943.

The range of this Maccaw in Central America is somewhat singular. We find it occurring as far north as Mazatlan, in Western Mexico (Finsch, Abh. Nat. Ver. zu Bremen, 1870, p. 352); and specimens of it were obtained by Mr. le Strange

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researches, I cannot but think doubtful. Unfortunately the localities attached to many of the British-Museum specimens are so frequently without the authority of the original collector, the labels bearing only the name of the person, sometimes donor, sometimes dealer, from whom they have been acquired, that confirmation from other sources is necessary.

For this reason I omit the following from the present list:—

Hand-List, No. 8148. CONURUS AURIFRONS, Nicaragua? (presented by E. Wilson). This is really a Peruvian and Bolivian species.

No. 8328. CHRYSOTIS PRETRII, Mexico. Mr. Gray apparently quotes Temminck, Pl. Col. 492, as the authority for this locality; but Temminck gives it with hesitation. The true locality is S. Brazil (*cf.* Finsch, Papag. ii. p. 529).

No. 8351. PSITTACULA CŒLESTIS, Nicaragua (presented by E. Wilson).

No. 8352. PSITTACULA CONSPICILLATA, Nicaragua (presented by E. Wilson).

The former of these species is only known to occur in Western Ecuador, and the latter in the United States of Columbia and on the Rio Napo.

No. 8122. CONURUS CANICULARIS, Mexico, appears to be the same as *C. petzi* from the same country (*cf.* Finsch, Papag. i. p. 503).

No. 8325. CHRYSOTIS ÆSTIVALIS, Mexico, probably = *C. autumnalis* (*cf.* Finsch, Papag. ii. p. 548).

during his residence in the city of Mexico. In Guatemala the bird has never yet been met with, nor yet in Honduras; and we do not find any record of its occurrence till we come to Costa Rica, where examples were collected at Barba by Carmiol, which are now in the collection of the Smithsonian Institution. Dr. v. Frantzius also mentions it in his list of the birds of Costa Rica (J. f. Orn. 1869, p. 364).

In Veragua it seems to be not uncommon, and Arcé has sent us several specimens from the neighbourhood of Calobre.

It occurs on the Isthmus of Panama (Lawr. Ann. N. Y. Lyc. vii. p. 299), and also on the Nercua River (Cass. Pr. Ac. Phil. 1860, p. 137.).

In the southern continent this species ranges as far as Bolivia (*cf.* Finsch, *l. c.*).

In a note (P. Z. S. 1867, p. 183) on living specimens of this Maccaw in the Gardens of the Zoological Society, Mr. Sclater endeavours to differentiate the Mexican race from that found in the southern continent, and adopts Bechstein's name *ambigua* for the northern bird, retaining the name *militaris* for the southern. Judging from a Bogota skin in his own collection, Mr. Sclater says that the smaller bird is that found in South America, and hence concludes that the larger belongs to Mexico. With Veraguan and Mr. le Strange's Mexican specimens before me, exactly the opposite conclusion presents itself: the Veraguan specimens are the larger. Therefore, in the face of this difficulty, I am indisposed to admit of the existence of two species depending for their validity on disparity of size alone.

2. Ara macao (Linn.).

Ara aracanga, Scl. & Salv. Ibis, 1859, p. 137; P. Z. S. 1864, p. 367.

Sittace macao, Finsch, Papag. i. p. 398.

Though included by Lichtenstein in his 'Preisverzeichniss der Thiere aus Mexico,' *Ara macao* has never been sent from within the limits of Mexico by any naturalist since the days of Deppe and Scheide (1830); and I think it probable that, if the species really occurs in Mexico at all, it is only to be found in the forest country, on the Pacific side of the Isthmus of Tehuantepec.

In Guatemala it is abundant, both on the Pacific side of the Cordillera, and also in Vera Paz. I found it also in the open Pine-ridges of Poctun, on the road from Cahabon to Peten; and I also saw occasionally a pair flying high over the plain of Salamá, which lies in the interior of Guatemala, at an elevation of about 3000 feet above the sea-level. It does not usually range above this elevation; but in all the lowland country where forests extend it is common. Throughout the country it is known under the name 'Guacamaya.'

In Honduras, Mr. G. C. Taylor met with it near Comayagua, and Leyland obtained specimens in the vicinity of Omoa.

From Costa Rica, Carmiol has sent us specimens; and the Smithsonian Institution has received examples from Los Anonos in the same republic. Dr. v. Frantzius (J. f. Orn. 1869, p. 364) tells us that this species is found on the south-west side of the mountains, *A. militaris* taking its place on the north-east side.

No specimens have yet reached me from Veragua; but from Panama I have received skins from the late Mr. M'Leannan, who also forwarded others to Mr. Lawrence.

Southward of the Isthmus, this species has an extensive range.

3. Ara chloroptera, G. R. Gray.

Sittace chloroptera, Finsch, Papag. i. p. 403.

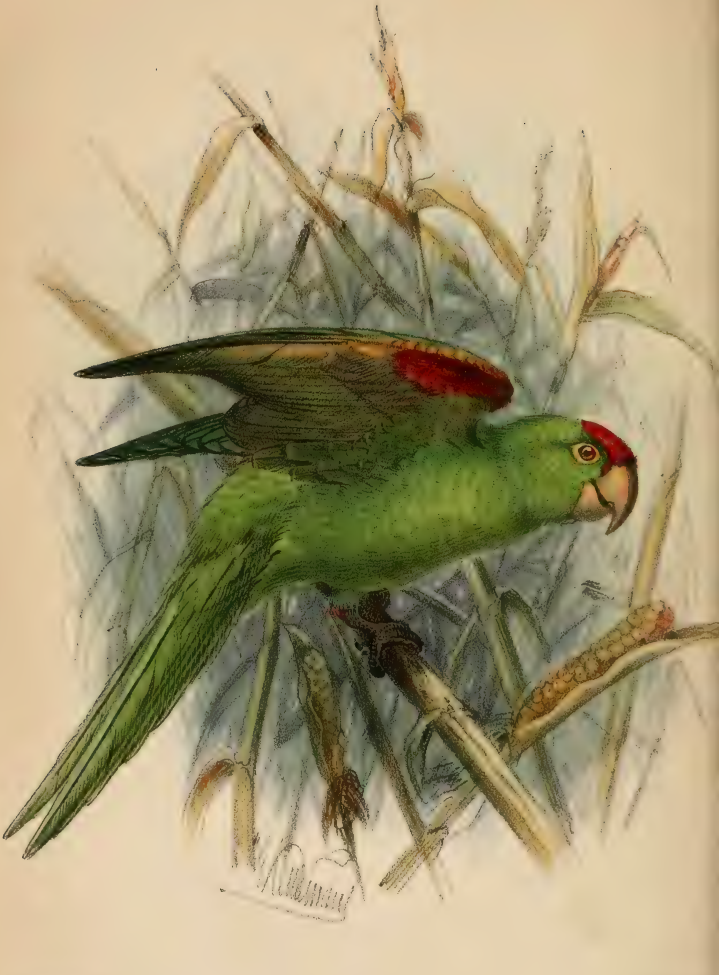
This species though ranging over nearly the whole of the tropical portions of the southern continent, only comes within the limits of Central America at Panama, where M'Leannan obtained specimens, and forwarded them to us (*cf.* P. Z. S. 1864, p. 367).

4. Ara ararauna (Linn.).

Sittace ararauna, Finsch, Papag. i. p. 410.

This well-known species seems to be of uncertain occurrence in Central America. Specimens were obtained near the mouth of the Atrato by the naturalists who accompanied Lieut. Michler's Darien expedition (Cassin, Pr. Ac. Phil. 1860, p. 137).

I have only seen one authentic Central-American specimen; and this was obtained for us near Chépo, on the Isthmus of



J G Keulemans lith
M & N Hanhart imp

CONURUS FINSCHI.

Panama, by Arcé in 1864. Neither M'Leannan, nor any of the collectors in Costa Rica seems to have met with it. Dr. Finsch, *l. c.*, quotes Leyland for its occurrence in Honduras; but I can find no record of it in the published list of Leyland's birds (*cf.* P. Z. S. 1859, p. 59).

5. Ara severa (Linn.).

Sittace severa, Finsch, Papag. i. p. 417.

Mr. Lawrence records (Ann. Lyc. N. Y. vii. p. 474) having received a specimen from Panama, sent him by M'Leannan; and the bird was observed by the collectors of Lieut. Michler's expedition at the mouth of the river Nercua (Pr. Ac. Phil. 1860, p. 137). There is also a specimen in the British Museum said to have come from Nicaragua; but this locality requires confirmation. I myself have never seen a Central-American specimen of this Maccaw.

6. Rhynchopsitta pachyrhyncha (Sw.).

Sittace pachyrhyncha, Finsch, Papag. i. p. 428.

This species is quite restricted in its range to Mexico, where it has been obtained by most of the collectors who have visited that country. Though included in *Sittace* by Finsch, the densely feathered lores suggest its close relationship to the genus *Conurus*. The bill, however, is that of an *Ara*.

7. Conurus finschi, sp. n. (Plate IV.)

Prasinus, subtus paulo dilutior; fronte, campterio, et subalaribus exterioribus coccineis; remigibus subtus flavo tinctis: macula tibiali postice rubra: rostro flavo, pedibus pallide corylinis. Long tota 11 (poll. angl.), alæ 6·2, cauda rectr. med. 5·5, rectr. ext. 2·6, tarsi 0·6.

Hab. Bugaba, Chiriqui, Veragua (*Arcé*).

Mus. S. & G.

Obs. C. wagleri et *C. frontato* affinis, ab illo subalaribus coccineis, ab hoc statura minore et vertice dimidio antico solum coccineo differt.

During his recent expedition to Chiriqui, Arcé obtained three specimens of this Parrot near Bugaba, a village situated to the westward of David, and upon the southern slope of the volcano of Chiriqui. [See map accompanying my paper on the birds of Veragua, P. Z. S. 1870, t. xvii.]

Believing the species to be undescribed, I sent specimens to Dr. Finsch, of Bremen, for further examination. He writes respecting them as follows:—"The *Conurus* is, undoubtedly, an excellent new species, as you suspect. I have examined the bird accurately, and find it nearly allied to *C. wagleri*, having the red on the forehead quite as in that species. *C. wagleri*, however, has the under wing-coverts along the metacarpus green, whereas in the new bird they are red. The size, too, of the new species is much less, the wing measuring 5 inches 10 lines (German) instead of 6 in. 2 lines, the dimensions of the smallest *C. wagleri*. *C. frontatus*, Cab., from Peru, is far more nearly allied: in it the under wing-coverts are also red; but this colour is confined to the edge of the metacarpus. *C. frontatus*, too, has the whole vertex red, and is even larger than *C. wagleri*, the wing measuring 8 in. 4 lines."

I have named this species after Dr. Finsch, whose monograph of the *Psittacidæ* will long remain the standard work on this family.

8. CONURUS HOLOCHLORUS, Scl.: Finsch, Papag. i. p. 466.

This species is found in great abundance in the highlands of Southern Mexico and Guatemala. The original specimen, which formed the type of Sclater's description, came from Jalapa, whence it was sent by M. de Oca (Ann. N. H. ser. 3, iv. p. 224, 1859). Throughout Guatemala, this *Conurus* is found wherever Indian corn is grown in the vicinity of the upland villages. So far as I am aware, it seldom descends below an elevation of 4000 feet; but above that limit it may frequently be seen. It is said to breed in large numbers in the tablelands lying between Chimaltenango and Panajachel; and one of the ravines traversed by the track between these villages takes its name "el Barranco de los Chocoyos" from the number of these Parrots frequenting it.

9. CONURUS PETZI (Wagl.): Finsch, Papag. i. p. 502.

This species, though locally distributed, is found from Mexico to Costa Rica. In the former country specimens were obtained by Deppe, and more recently by Sallé at Acapulco. In Guatemala I found it abundant at Agua Caliente, near where the road from the capital to Salama crosses the Rio Motagua. Mr. G. C. Taylor observed it in Honduras, Delattre in Nicaragua, and Dr. v. Frantzius, the Carmiols, and Zeledon in Costa Rica. Southward of this point this species has not been recorded, as neither Arcé in Veragua, nor M'Leannan at Panama have met with specimens.

10. CONURUS OCULARIS, Scl. & Salv.

Conurus pertinax, Finsch, Papag. i. p. 506 (partim).

This species is restricted in its range to the Panama railway-line and the adjoining districts of Veragua. If constancy of character indicates specific distinction, this bird is entitled to specific rank. I have examined a score of specimens, none of which show any tendency to vary from one another, and all exhibit a certain difference from more southern examples.

11. CONURUS AZTEC, Sonancé: Finsch, Papag. i. p. 522.

This species is confined to the northern portions of the Central-American isthmus. The Mexican collectors seem to have met with it both on the east and west side of the Republic. In Guatemala it is not common. I found it at Cahabon in Vera Paz, and also in the vicinity of Peten; Leyland observed it near Belize, and Dr. Schott in Yucatan (Lawr. Ann. L. N. Y. ix. p. 207); and recently Whitely obtained specimens at San Pedro, in Honduras; Taylor also met with it near Comayagua. The most southern localities recorded for the occurrence of this Parrot are:—the Blewfields river, where Mr. H. Wickham obtained specimens (*cf.* P. Z. S. 1867, p. 280); and Greytown, where Mr. Holland procured it (*cf.* Lawr. Ann. L. N. Y. viii. p. 185).

12. CONURUS HOFFMANNI, Cab.: Finsch, Papag. i. p. 533; Scl. & Salv. Ex. Orn. t. lxxxi.

This *Conurus* is entirely restricted to Costa Rica and the adjoining highlands of Veragua, whence Arcé has sent numerous specimens. It is the only species of this section of *Conurus* found in Central America.

13. BROTOGERYS TOVI (Gm.): Finsch, Papag. ii. p. 99.

Though not found in Mexico, this is a common species in the lowland forests of Guatemala, in the districts adjoining the Pacific Ocean, where I obtained specimens near the hacienda La Concepcion and also at Chiapam, on the coast. I have no record of having personally met with it anywhere in Vera Paz, or on the Atlantic side of the Cordillera, and now think that the locality 'Coban' cited in Mr. Sclater's and my paper (Ibis, 1860, p. 44), which was taken from a skin, may be erroneous. Mr. Taylor found *Brotogerys tovi* in Honduras; and Arcé obtained specimens on the Gulf of Nicoya, in Costa Rica. The last-named collector has also forwarded us numerous specimens from Chiriqui and Calobre in Veragua. M'Leannan forwarded us examples from Panama. Lastly, specimens were obtained on the Atrato by Lieut. Michler's expedition (Proc. Ac. Phil. 1860, p. 137). Southward of this point, *B. tovi* passes into Columbia, and is not unfrequently seen in the well-known collections from Bogota*.

14. Bolborhynchus lineolatus (Cass.): Finsch, Papag. ii. p. 130.

This is by no means a common species, though of wide range. In Southern Mexico Sallé obtained specimens near Cordova; and Mr. White's collection, formed in the vicinity of Mexico, contained an example (P. Z. S. 1864, p. 177). Dr. Cabot found it on the island of Cozumel, off the coast of Yucatan; and in Guatemala Mr. Godman and I discovered a small flock in the Volcan de Fuego, at an elevation of about 8000 feet above the sea-level. We saw them in a tree overhanging the track to Acatenango, above the Indian huts of Calderas, and succeeded in securing three or four specimens before the rest took fright and flew away.

In a collection recently forwarded to us from Costa Rica by

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* Brotogerys subcærulea (Lawr.): Finsch, Papag. ii. p. 97, t. 2.

Dr. Finsch, *l. c.*, considers this bird to belong to a good species. For my own part, without having seen the original specimen, I cannot but think that the blue colouring of the plumage is accidental, and due to a deficiency in the yellow element of the normally green colour of the feathers. M'Leannan, who shot the specimen from which Mr. Lawrence took his description (the only one, I believe, that has ever been obtained), considered it only a variety of *B. tovi*, with individuals of which species he found it associating.

I notice that in some specimens in our series of *B. tovi*, the feathers of the back are bluer than in others. *B. subcærulea* may only show an extreme development of this tendency.

Carmiol, we found a single example; and this is the only record of the occurrence of the species in the southern portion of Central America.

It would appear, however, to be likewise found in the southern continent, as there is said to be a specimen in the Paris Museum, which was forwarded in the fine series of Venezuelan birds now in that collection by M. Levraud. If distinct, this latter bird must bear the name *B. tigrina* (Souancé).

15. PIONUS SENILIS (Spix): Finsch, Papag. ii. p. 460.

There can be little doubt that Spix committed an error when he described and figured this species in his great work on the birds of Brazil, giving that country as its habitat. The species is now well known as an inhabitant of Central America, having been obtained in various parts of that country. In Mexico, Deppe procured it for the Berlin Museum, and Sallé also found it near Cordova. It is common in the province of Vera Paz, in Guatemala. Mr. Godman and I obtained specimens near Coban, and also at Choctum, in January and February, 1862; and I also observed it at Lanquin, to the eastward of the former town. It occurs also at Greytown, Nicaragua (*cf.* Lawr. Ann. L. N. Y. viii. p. 185)—and in Costa Rica, the collection of the Smithsonian Institution containing specimens from San Jose and Barranca. We also have a specimen collected by Carmiol at Angostura. This species does not appear to be found in more southern districts.

16. PIONUS MENSTRUUS (Linn.): Finsch, Papag. ii. p. 441.

This wide-ranging South-American species penetrates but a short way beyond the confines of Central America. The most southern point within our limits where it has as yet been observed is Chépo. Here Arcé obtained several examples in 1864. On the Panama railway it would appear to be common, specimens having been usually included in M'Leannan's collections. Northward of this point Arcé found it at Santa Fé and Calobre, in Veragua, and again in the neighbourhood of Chiriqui—where, however, it would appear to have reached the limits of its range, as none of the collectors in Costa Rica have observed it.

17. Caica hæmatotis, Scl. & Salv.: Finsch, Papag. ii. 420.

M. Boucard obtained examples of this species at Playa Vicente in Southern Mexico (Scl. P. Z. S. 1862, p. 20); and this is, I believe, the only occasion on which the bird has been seen within the limits of Mexico. In Guatemala it is common in the forests of Vera Paz. The first specimens I obtained were shot in the highland forests above the village of Lanquin, in Vera Paz. Mr. Godman and I frequently saw it in the neighbourhood of Choctum in January and February, 1862; and I afterwards met with it in my journey to Peten, in the forests north of Cahabon, near the rancho of Chimuchuch. Mr. G. M. Whitely has recently brought specimens of this Parrot from San Pedro, in Honduras; and the bird-collectors of Costa Rica seem familiar with it. Carmiol has sent skins of it from Pacuar to the Smithsonian Institution, and others to us from Angostura. Arcé, too, met with it at Santa Fé, in Veragua, and M'Leannan near Lion Hill, on the Panama railway. These last show a few red feathers on the chest, upon which character chiefly Mr. Lawrence based the species he called *C. coccineicollaris*. The feature is of slight value, being of variable amount; but it must be remarked that it is possessed by the Panama specimens alone, not even the Santa-Fé examples showing any indications of such a marking.

18. Chrysotis albifrons (Sparrm.): Finsch, Papag. ii. p. 526.

With the exception of Col. Grayson (*cf.* Finsch, Abh. Nat. Ver. zu Bremen, 1870, p. 321), modern travellers in Mexico do not seem to have met with this Parrot. According to Wagler, it is one of the species mentioned by Hernandez; and Deppe sent specimens of it to the Berlin Museum (Finsch, *l. c.*). In Yucatan Dr. Schott observed it near Merida (Lawr. Ann. L. N. Y. ix. p. 207). In Guatemala it is always to be seen in the trees near the hot-water springs of Agua Caliente, on the road to Vera Paz, close to the bridge over the river Motagua. I once saw a flock at the side of the great ravine which separates the active peak of the Volcan de Fuego from the more ancient summits. This was not less than 8000 feet above the sea-level. It also occurs on the Pacific side of the Cordillera and specimens were often brought to us from the forest-clad mountain-slopes below Dueñas. Mr. G. C. Taylor (Ibis, 1860, p. 121) found this species at San Pedro, near the northern sea-board of the Republic of Honduras; and very recently Mr. Whitely obtained specimens at the same spot. The most southern limit of its range seems to be the shores of the gulf of Nicoya, where Dr. v. Frantzius and M. Zeledon both procured examples (Ann. Lyc. N. Y. ix. p. 131; J. f. Orn. 1869, p. 366). I have never seen skins of it in any of the extensive collections from Veragua and Panama.

19. CHRYSOTIS XANTHOLORA, G. R. Gray: Finsch, Papag. ii. p. 528.

I never met with this species in a wild state, and the only specimens I have seen are those in the British and Leyden Museums. That in the former collection is said to have been obtained by Dyson in Honduras, and hence the title of the species to appear in the present list.

20. CHRYSOTIS FINSCHI, Scl.: Finsch, Papag. ii. p. 543.

This species, though confined to Southern Mexico, appears to have been sent by Sallé only in one of his earlier collections (*cf.* Scl. P. Z. S. 1857, p. 230, sub *C. viridigenalis*). None of his correspondents seem to have obtained examples; at least there are no records of such having been the case. The species is closely allied to *C. diademata,* but, according to Finsch (*l. c.*), is smaller, and has the under surface of a uniform golden green, without dark edgings to the feathers. The base of the inner web of the outer rectrix has a red patch.

21. CHRYSOTIS DIADEMATA (Spix): Finsch, Papag. ii. p. 545: Salv. Ibis, 1870, p. 113.

C. viridigenalis, Scl. & Salv. P. Z. S. 1864, p. 368; Lawrence, Ann. Lyc. N. Y. ix. p. 131.

C. autumnalis, v. Frantzius, J. f. Orn. 1869, p. 365.

Admitting Dr. Finsch's determination of this species to be correct, I have no doubt that the names I quote above are all applicable to the same bird. I have seen numerous specimens from Panama; and from Veragua Arcé has sent us several examples. Our collection also contains specimens from Costa

Rica, collected by Carmiol; hence I infer that the bird called *C. viridigenalis* by Mr. Lawrence (Ann. Lyc. N. Y. ix. p. 131) really belongs here. Dr. v. Frantzius (J. f. Orn. 1869, p. 365) considers the Smithsonian skins referable to *C. autumnalis*; but, from the fact of the presence of the true *C. diademata* in Costa Rica, I think he is in error, and that the latter species is really what he had before him.

The species is readily distinguishable from *C. autumnalis* by having the cheeks green instead of yellow.

Its nearest ally is *C. finschi*, the species last mentioned.

22. CHRYSOTIS AUTUMNALIS (Linn.): Finsch, Papag. ii. p. 547.

This species is restricted in its range to Southern Mexico, Guatemala, and the northern portion of Honduras. In Mexico Sallé obtained it at Jalapa (*cf.* Scl. P. Z. S. 1857, p. 205), and Boucard also sent specimens from Playa Vicente (Scl. P. Z. S. 1859, p. 389). In Guatemala its range seems restricted to the forest-districts of the northern portion of Vera Paz. During an expedition to Choctum, an Indian village about two days' journey north of Coban, and situated about 1200 feet above the sea-level, in the Tierra Caliente, Mr. Godman and I frequently saw flocks of this species, and obtained specimens. I am not aware that it is found in any other parts of Guatemala. In Honduras, Leyland records it from Omoa; and Mr. G. M. Whitely has recently sent specimens from San Pedro, in the same republic. There are no authentic records of its occurrence further to the southward of this point.

23. CHRYSOTIS GUATEMALÆ, Scl.: Finsch, Papag. ii. p. 562, t. 4.

Though a specimen of this Parrot seems to have been in the Bremen Museum since 1844, the first description of it appeared in 'The Ibis' for 1860, p. 44, where it is named *C. guatemalæ*, as suggested by Dr. Hartlaub. About the same time fresh examples were forwarded by Sallé from Orizaba (P. Z. S. 1860, p. 44). In Guatemala this Parrot is very common at Choctum, in the forest of Vera Paz, where it is known as the Cho-cho. Mr. Godman and I obtained a good series of specimens in 1862. Mr. Whitely has recently brought skins of it to England, which he collected at San Pedro, in Honduras. It also appears to be abundant in Costa Rica, where Carmiol obtained examples at Cervantes. These are referred by Mr. Lawrence (Ann. Lyc. N. Y. ix. p. 131) and Dr. v. Frantzius (J. f. Orn. 1869, p. 365) to *C. pulverulenta*; but I have little doubt they really belong to *C. guatemalæ*, as specimens in our collection from Costa Rica do not differ from Guatemalan examples (*cf.* Salv. Ibis, 1870, p. 113). From Veragua we have received specimens from Arcé (P. Z. S. 1870, p. 214); and Mr. Lawrence, under the name *Psittacus pulverulentus*, includes it in his Catalogue of M'Leannan's collection from Panama (Ann. Lyc. N. Y. viii. p. 11).

24. CHRYSOTIS AURIPALLIATA (Less.): Finsch, Papag. ii. p. 568.

There is no authentic instance of the occurrence of this Parrot in Mexico. In Guatemala it is common, but only in the forest-region of the Pacific side of the Cordillera. Though thus restricted in its range, it is by far the commonest species observed domesticated throughout the Spanish houses of the country. In Honduras, it still seems restricted to the Pacific coast, being abundant on Tigre Island, in the bay of Fonseca (G. C. Taylor, Ibis, 1860, p. 121). The same may be said for Nicaragua, Lesson's type having been obtained at the Pacific port of Realejo. In Costa Rica, however, we are told by Dr. v. Frantzius (J. f. Orn. 1869, p. 365), that it is found on the banks of the river Sarapiqui, which discharges itself into the Rio San Juan, and thence into the Atlantic Ocean.

25. CHRYSOTIS OCHROCEPHALA (Gm.): Finsch, Papag. ii. p. 584.

Though this widely-distributed and well-known species has been already observed in Columbia, Sclater's collection containing a specimen sent from Bogota by Mr. Mark, it has not hitherto been detected within the limits of Central America. In a collection recently received from our collector Arcé we found a single female specimen, which had been shot at Chiriqui, so that this species must now be added to the already rich series of Parrots found in Central America.

26. Chrysotis levaillanti, G. R. Gray: Finsch, Papag. ii. p. 580.

This species, which has received a number of names (*cf.* Finsch, *l. c.*), is best known from Mexico, where most of the travellers who have visited that country seem to have met with it. Deppe sent specimens of it to the Berlin Museum as long ago as 1824; and Sallé and Boucard both obtained it at Rio Grande and Playa Vicente (*cf.* Scl. P. Z. S. 1857, p. 230, et 1859, p. 389). According to Finsch, it has been sent from the Tres Marias Islands; and a specimen of it from Jalapa is stated to be in the Heine collection. In Guatemala I have no certain knowledge of its occurrence, though I have little doubt it may be found at Peten and the adjoining districts of Yucatan. At Belize it may frequently be seen as a cage-bird, being doubtless found in the neighbouring forests.

27. Psittacula cyanopyga, Souancé: Finsch, Papag. ii. p. 662, et Abh. Nat. Ver. zu Bremen, 1870, p. 352.

This species has been recently obtained in the Tres Marias Islands, off the coast of Western Mexico, by Col. Grayson, and forwarded to the Bremen Museum (*cf.* Finsch, *l. c.*). The avifauna of this group of islands is most remarkable, and, viewed with reference to the geographical distribution of species, offers a most perplexing problem for solution. At present we probably know only a fragment of their whole bird population, which well merits the attention of some enterprising naturalist.

VII.—*Descriptions of Two new Species of African Birds.*

By R. B. Sharpe, F.L.S., Libr. Z.S.

In a collection recently sent to me from Fantee by His Excellency Governor Ussher I have received many very interesting birds, details of which I hope shortly to be able to lay before the readers of 'The Ibis;' but I may be pardoned for at once bringing before their notice one of the most interesting ornithological discoveries likely to be made for some time, being no less than a new species of *Scotopelia*, which I propose to call, after Mr. Ussher, the discoverer of this fine novelty:—

Scotopelia ussheri, sp. n.

S. ferruginea, suprà unicolor: subtùs dilutior, rachibus plumarum angustè brunneo notatis: alarum et caudæ plumis in pogonio interno nigro fasciatis, illarum latiùs, hujus angustiùs: tibiis fulvescentibus unicoloribus. Long. tot. 19·5 poll. angl., alæ 12·5, caudæ 7·5, tarsi 2·1.

The above short description is quite sufficient to separate the new Owl from the well-known *Scotopelia peli*, from which it differs in the following characters, viz. in its smaller size, in the uniform rufous colouring of the upper surface, and in the different coloration of the lower surface of the body, which is rust-coloured, everywhere distinctly striped with dark brown along the centre of the feather. In *S. peli* the centre of the breast is rich cream-colour, while only the sides of the body are streaked with rufous brown, these streaks having rather the appearance of longitudinal drops on the plumage. The disparity in size between the two species is evinced by the following measurements:—

	Long. tot.	Al.	Caud.	Tarsi.
1. *Scotoplia peli.* Ex Zambesi	22·0	17·0	10·5	2·4
2. *Scotopelia ussheri.* Ex Fantee ..	19·5	12·5	7·5	2·1

While on the subject of African ornithology, I may draw attention to a species of Finch in my collection, which appears not to have been described, and which I propose to name

Poliospiza crocopygia, sp. n.

♂. *P.* suprà pallidè fusca, plumis medialiter obscurioribus: lineâ superciliari et striâ suboculari albidis: genis fuscis: tectricibus alarum, remigibus et rectricibus nigricanti-fuscis, pallidè fusco marginatis: dorso postico et uropygio cum tectricibus supracaudalibus lætissimè sulphureis, his fusco mixtis: gulâ, abdomine et tectricibus subcaudalibus purè albis: pectore superiore et hypochondriis fuscis: subalaribus albidis, sulphureo lavatis: gulâ mediâ et laterali maculis fuscis parvulis notatis: rostro pallidè brunneo, mandibulâ albescente: pedibus fusco-brunneis.

♀ mari omnino similis, sed subalaribus flavo haud tinctis.

Above pale greyish-brown, the middle of the feathers darker, giving a striped appearance on the head, and mottled on the back; lower part of the back, rump, and upper tail-coverts bright sulphur-yellow, the latter somewhat tinged with brown, owing to the basal portion of the feather being of this colour;

wing-coverts, quills, and tail-feathers dusky brown, edged with paler whitish brown; a superciliary line and a small stripe under the eye white; throat white, marked irregularly down the side and in the middle with dusky brown spots; ear-coverts, upper part of the breast, and flanks pale greyish brown; abdomen and under tail-coverts pure white; bill pale horn-brown, lower mandible much paler and inclining to yellowish white; feet dusky brown. Total length 5·3 inches, wing 3·35, tail 2·1, tarsus 0·7.

Hab. Damara Land (*C. J. Andersson*).

This bird seems to be the South-African representative of *Poliospiza xanthopygia* (Rüpp.), a careful description of which is given by Dr. von Heuglin (Orn. Nordost-Afr. p. 641), but is considerably larger in all its dimensions. At first sight it might be taken for *Crithagra albogularis*, Smith (S. Afr. Q. Journ. ii. p. 48), but differs in the bright sulphur-coloured rump being common to both sexes, whereas in *C. albogularis* the female has the rump uniform with the back. *Poliospiza crocopygia* is also much lighter in coloration than *C. albogularis*.

VIII.—*Letters, Extracts from Correspondence, Announcements, &c.*

Instead of the articles entitled "*Recent Ornithological Publications*" which have hitherto appeared in 'The Ibis,' the Editor proposes to give in the October number of each year notices of all books and papers relating to Ornithology published during the preceding year. These will be arranged in alphabetical order, and will contain such remarks as each publication seems to call for. It is believed that this plan will render this portion of 'The Ibis' less ephemeral in its nature, and that it will be useful as a permanent index for reference.

In order to make this article as perfect as possible, Contributors to 'The Ibis' and all other ornithologists are requested to forward to the Editor, before the 1st of July next, a complete list of their publications during the year 1870.

We have received the following letters addressed to "The Editor of 'The Ibis'":—

Marldon, Totnes, 23rd November, 1870.

Sir,—In a list of birds from the colony of Natal, contributed by me to 'The Ibis' for 1859, I included (at page 246) the South-African grey Cuckoo (*Cuculus gularis* of Stephens, *C. lineatus* of Swainson, *Le Coucou vulgaire d'Afrique* of Le Vaillant), with an accompanying note from Mr. Ayres to the effect that the bird was "very rare" in Natal.

I have recently reexamined the two skins sent over by Mr. Ayres upon which the above notice was founded, in company with Messrs. Jules P. Verreaux and R. B. Sharpe, both of whom agree with me in considering that I was wrong in assigning them to *Cuculus gularis,* and that they are in fact specimens of the true European *Cuculus canorus,* in very nearly adult plumage, but still retaining some little remains of the immature dress in the wings and on the back.

I believe that no instance of the occurrence of *Cuculus canorus* so far south has hitherto been recorded, though Drs. Finsch and Hartlaub, in their recent excellent work on the birds of East Africa, refer at page 520 to a specimen of the European Cuckoo which they have seen from Damara Land, where two other examples, now in the collection of Mr. R. B. Sharpe, were also obtained by the late Mr. Andersson. One of these Damara birds is a male, in a state of change very similar to that shown by my specimens from Natal, killed on the 6th February; and the other is a fully adult female killed on the 1st April.

The most constant difference between the adults of *Cuculus canorus* and of *C. gularis* appears to be that in the latter the base of the upper mandible is yellow and the anterior part only is a black horn-colour, whilst in the former the entire upper mandible is black, except a very narrow yellowish edging immediately below the nostrils.

Cuculus gularis, when adult, also differs from the majority of adult specimens of *C. canorus* in being slightly smaller, and in having the white spots and markings on the tail larger.

I am yours, &c., J. H. Gurney.

Sir,—I have on several occasions furnished you with accounts, which you have thought worthy of notice, of the birds I have encountered during my trips by sea to various parts of the world. During my recent voyage from the Cape I fell in with so many land-birds far out at sea that I cannot refrain from again troubling you with a few notes.

We sailed from Table Bay on the 4th of October last; we may call it our first spring month, perhaps. The usual Cape birds accompanied us till nightfall, *Diomedea melanophrys, Procellaria æquinoctialis, P. gigantea, P. capensis* and the little *Thalassidroma wilsoni.* Next morning only the two latter were in any numbers, and an occasional *P. macroptera,* easily distinguishable by its large bill, swept past us. On the third day all had left us save the Storm-petrels (*T. wilsoni*), which were in greater numbers than I had ever seen before, and I managed to snare two of them with black thread.

They remained with us in diminishing numbers till we reached St. Helena; indeed we saw an odd bird now and then till we came to the Bay of Biscay. At St. Helena we fell in with *Gygis candida* and *Anous stolidus* in considerable flocks. My friend Mr. Melliss, whose name has already appeared in these pages, gladdened our ears with the intelligence that the English Thrushes, Blackbirds, and other songsters which he had introduced, had thriven well, and that in the cool mornings the air resounded with their melody from many a wooded dell. One of the artillerymen had seen a Thrush's nest with four eggs.

Leaving St. Helena, we steamed an uninteresting course to Ascension, where we arrived early in the morning. A Frigate-bird (*Fregata aquila*) paid great attention to the dogvane of our foremast head, and succeeded in tearing away half of the bunting. Had it not been Sunday, I would have let my Westly Richards speak to him on the subject. *Onychoprion fuliginosus,* the bird of "Wide-awake" Fair, and a few Gannets (*Sula piscatrix*?), in young plumage, were in ample abundance; the latter perched on our jibboom-end, but were not such *boobies* as to let themselves be caught.

Two days after we left St. Helena we came to grief, breaking our last spare piston-rod (one had gone previously), and we had to proceed with but one engine. This obliged us to consult the wind, and alter our course; and we passed Senegal on the 24th, just about 90 miles to the westward; but our first land visitor came off to us in the shape of a Wagtail (*Budytes rayi*). Off Cape Verde two Common Swallows (*Hirundo rustica*) boarded us, and remained about the ship for some hours, perching on the booms and boats. A small Sandpiper, much exhausted, also came and alighted on the deck. I improvised a blowpipe, or *sumpetan*, out of an old condensing-pipe belonging to the engine, but failed to find any bullets for it. At last I tried some dough, which I saw the baker kneeding into rolls; but my friend's bread was too light and delicious to be destructive to any thing; and though I hit my bird plump on the breast, my pellet only flattened, and frightened it away to a vessel in the offing.

In the Bay of Biscay the following species came and pitched on, or hovered about the ship:—two Hawks (what species I could not determine), a Stockdove, two Starlings, two Thrushes, two Robins (one of which came into the after ports, and was captured by the stewardess; it was much exhausted, and died in a few hours), one Redstart ♀, two Swallows, one Martin, three Skylarks, one Linnet, I think, a Redpole. I heard of several others, but did not see them; and my informants could only say "they are not sea-birds"—that was all they knew.

I noted a large *Lestris* more than once during the voyage; also a smaller species, with two projecting tail-feathers. I should mention that we kept a long way from land on account of the breeze, and must have been at least 150 miles from land in the Bay of Biscay. Weather was very fine and calm, or with light S.E. wind.

The most interesting bit of ornithological information that I acquired during this voyage consisted in the addition of three new birds (and the true habitats of two others) to the list of S. African birds. Four gentlemen (Capt. Watson and Messrs. Fellowes, Edwards, and Dorney) having been shooting in the neighbourhood of St. Lucia Bay, the two first named picked up a few stray specimens, though not intending to make any thing of a collection. They kindly unpacked their boxes for my inspection, and, to my great delight, I found fine examples of *Numida verreauxi*, *Ardea rufiventris* (Sund.), *Hoplopterus crassirostris*, all new to my catalogue, also specimens of *Laniarius quadricolor* and *Buphaga erythrorhyncha*.

N. verreauxi they describe as found only in two small patches of country—one the Umgowie Forest, near the Umlalaas River, in Zululand (lat. 20°), the other on a small promontory running into St. Lucia Bay. On this bay also was procured *A. rufiventris*, about which I have no further information.

H. crassirostris was obtained in the mouth of Ihluhlui Bay, a small indent in St. Lucia Bay, and seems to have been not uncommon, annoying the hunters by its pertinacious attentions and loud cries, alarming all the large game in the vicinity. Mr. Fellowes's specimen fell a victim to his importunity.

Buphaga erythrorhyncha seems the only Ox-pecker of that region, to the exclusion of *B. africana* (which I have received from further to the northward, collected by Dr. Exton); it seems common enough, and my friends were amused at my delight at the sight of this (to me unknown) species, which I had seriously begun to think must be only a phase of plumage of the other bird. It closely resembles it, and, but for the absence of the striking yellow base of the lower mandible and the presence of the yellow eyelids, might be mistaken for it. It also wants the light rump of *B. africana*.

L. quadricolor is found in the forests of the Umgene in Natal, and is not scarce; it is very rare to the westward (Cape Colony), but one specimen having fallen under my notice; that is in the Graham's Town Museum, and was shot in Olifant's Hoek, between Port Elizabeth and the Kowie.

St. Lucia Bay is described as the very paradise of feathered fowl, and must be a grand place for a collector. The healthy months are June, July, August, and the first half of September, after which fever reigns supreme. To the sportsman it is about the most inviting field open in South Africa; and my friends reaped a rich harvest as a reward for their undertaking. They propose to return there at some future time; and I hope they will take with them a well-qualified taxidermist, to preserve the treasures which seem profusely scattered before them. Sportsmen with ample means at their disposal little know the inestimable services they might render to science by so doing, besides the pleasure of bringing away a lasting rememberance of their expedition.

I am, &c.,

E. L. Layard.

Sir,—The accompanying very interesting letter from my friend Dr. Exton has reference to the habits of a bird whose home is in in a part of South Africa little visited by Europeans, and still less by any who make ornithology their study.

I am proud to say Dr. Exton has been one of the many who have been induced to take up the pursuit in South Africa in consequence of the publication of my book. Armed only with it and a copy of Van der Hoeven, he identified correctly (with, I think, three exceptions) all the birds he collected in the wild country about Kanye, in the Bechuana country (lat. 24° 50′ S., long. 25° 40′ E.), and in the Matabili Veldt. In the most generous manner he presented the whole of his collection, amounting to over a hundred species, to the Cape-Town and Albany Museums, where they are much prized, consisting, as they do, of some of our rarest species.

I am, Sir, yours faithfully,

E. L. Layard.

Cape Town, 25th May, 1870.

Sir,—I beg leave to call your attention to a question raised by P. L. Sclater, Esq., of the Zoological Society of London, relative to the crest of *Schizorhis.* In a paper by Mr. Sclater, in no. 1 of the 2nd volume of the 'Student and Intellectual Observer,' on "Turacoes and their distribution," there occurs the following passage:—

"Although some of these birds—the false *Turacoes* (*Schizorhis*)—are provided with a crest, *I doubt whether that organ is ever erected and depressed* after the manner of the true *Turacoes*."

With regard to *S. concolor,* I have had frequent opportunity of noticing the elevation and depression of the crest as one of the most common habits of the bird.

In travelling through the Bechuana country one often comes upon a party of five or six of these birds, hiding from the midday heats under the sheltered portions of denser foliage near the centre of a large tree.

Whilst yet undisturbed, the crest lies flat on the head, and can only be seen as a tuft projecting from the occiput. But their first act on becoming aware of an intruder, is to run along the branches, either to the summit of the tree or to the extremity of a branch commanding a good look-out, where, with crest fully erected and well thrown forward, they keep up a constant reiteration of their note. If but little alarmed, they move rapidly from branch to branch, frequently jerking up the crest, and assuming an attitude of attention*.

Again, after flight from one tree to another, on alighting they first rest on a branch, with the body somewhat horizontal, and the tail drawn nearly to the perpendicular, as if assuring themselves of their equilibrium, and then raising the body, elongating their neck and at the same time elevating the crest, they seem to take an observation as to the security of their new position.

So much is this a habit of the bird, that during the conversational difficulties of my earlier intercourse with the Bechuanas, when inquiring for the nest of *Schizorhis* (the native name of which is "*Ma-quaai*"), when it dawned upon the mind of a native what bird I meant, he has imitated its note, accompanied by a sudden jerking up of the hand, with his fingers extended to their utmost, as if at the same time to mimic the elevation of the crest.

In the same paper Mr. Sclater mentions that "Mr. J. J. Monteiro, speaking of the grey False Turaco (*S. concolor*), as observed in Benguela, expressly states that the crest-feathers are always carried erect." In my own experience, the observation of *Schizorhis* was an every-day occurrence; and, as I have stated, when undisturbed (also when in flight), very little of the crest is to be seen; but it is invariably carried erect on the least alarm.

I may here mention a peculiar scream of *S. concolor*. I was one day walking along a low ridge of rocks, from which I flushed an Owl, the common *Bubo maculosus,* that flew to some distance to a clump of trees.

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* These are precisely the habits of the various species of *Colius* found in the colony.—E. L. L.

Presently I heard an agonized scream, such as is made by a young antelope when just seized by a dog; and so exact a repetition of the sound was it, that even my dogs were deceived by it, and rushed off in the direction whence it came. I also sent off a Kafir boy, and presently followed myself, when I discovered it was the frighted scream of *Schizorhis,* of which a party were collected around the Owl I had previously disturbed, and whose presence appeared to be the exciting cause.

At a later period I had a second opportunity of verifying this observation.

I am, dear Sir,
Yours most truly,
E. L. Layard, Esq. H. Exton, M.D.

Greatham Vicarage, 15th Dec. 1870.

Sir,—In continuation of the few notes on the synonymy of the *Sylviidæ* in 'The Ibis,' Oct. 1870, I beg leave to add one or two further remarks. I have had the pleasure of receiving, through M. Jules Verreaux, a specimen of the *Phyllopneuste schwartzi,* Radde, from Lake Baikal. This new Siberian species proves to be identical with the well-known *Phylloscopus viridanus,* Blyth, J. A. S. xii. p. 967, = *Abrornis tenuiceps,* Hodgs. It is evidently the eastern representative of our *P. rufa* (L.), and never remains in India during the hot season. The Indian *autumnal* birds are brighter in plumage than the others.

There has been much confusion respecting *Phyllopneuste eversmanni.* The bird so figured by Middendorff is undoubtedly distinct from the *P. eversmanni,* Bp., and is perhaps the *P. borealis,* Blas. I have Middendorff's bird from the south side of Lake Baikal, 18th June. It is identical with *P. sylvicultrix,* Swinh. A specimen shot at Amoy in April, given me by Mr. Swinhoe, exactly corresponds in dimensions and shade with my Baikal bird. The autumnal and winter specimens from China are brighter in colour. This is exactly as in the British *P. trochilus.* Some of Mr. Swinhoe's specimens are rather smaller, but, being procured at the same times and places with the slightly larger forms, cannot, I conceive, be separated. If this bird is not *P. borealis*, Blas., Mr. Swinhoe's name will stand.

The birds which I have from Lake Baikal as *P. eversmanni*, Bp., = *S. icterina*, Eversm., are totally distinct, and belong to another group, much larger, with a short compressed bill, rounder wing, and are, in fact, simply the eastern representative of *P. trochilus*.

Under the name of *Phylloscopus fuscatus*, Blyth, I conceive that three distinct species have been confounded. Mr. Gray, in his invaluable Hand-list, includes *Phylloneuste sibirica*, Midd., under *P. fuscatus*, Blyth. Having now obtained a fair series of specimens from Siberia, India, and China, I find that this identification is only partially correct. Of the three species, from India and China, which have been classed as *P. fuscatus*, the largest is identical with *P. sibirica*, Middend. The intermediate form, procured in abundance by Mr. Swinhoe, is identical with *P. maacki*, Schrenk. The eggs of the larger specimens, from Lake Baikal, are pure white. I have seen many, and possess a nest. The eggs of the smaller bird, taken by Mr. Swinhoe in China, are like some varieties of *P. trochilus*, white with pale red blotches over the whole surface. There is yet a much smaller bird of the same group, on which I must not venture to dilate without consultation with my friend Mr. Swinhoe. Blyth, in his Catalogue, no. 1110, gives *P. brunneus*, J. A. S. xiv. p. 591, described from a small specimen, and subsequently J. A. S. xvi. p. 443, as a variety of *fuscatus*. It seems probable that the original discrimination was correct, in which case *P. maacki* must merge in *P. brunneus*, Blyth.

Yours, &c.

H. B. TRISTRAM.

Upper Norwood, 25th Oct. 1870.

SIR,—I trust the following notes respecting the nesting of *Mycteria australis* may prove of interest to your readers. Not far from my house at Mainpure, North-West Provinces of India, there stood an aged Peepul (*Ficus religiosa*); and in the top of this tree there was a mass of sticks measuring not less than 5 or 6 feet in diameter. A pair of gigantic Storks daily winged their way to and from this tree; and my observations on them led me to conclude that they were nesting; these were, moreover, confirmed by my egg-collector, who had noticed both birds in the tree at the same time. Seen from below, the nest appeared to be an accumulation of materials from the nests of Vultures (*Gyps bengalensis*) and Wokhabs (*Aquila fulvescens*); and I had hitherto considered it to be the common roosting-place of the Black-necked Storks.

On December 26, however, I persuaded a boy to climb the tree, a feat which he accomplished with great difficulty; and I was rewarded with the acquisition of four eggs, one quite fresh, one addled, and two with young chicks in them. During the month of December I visited three other nests, with the following results. From the first, two young birds flew off in a very juvenile state of plumage. From the second, four fully fledged young birds fell and were so killed. From the third, one young bird flew away fully fledged. Other nests were found empty. The eggs I took from the first nest were oval and of a uniform pure white colour, but had the inner lining of the dark green tint common to the eggs of birds of this class. They measured 2¾ in. by 2⅙ in., and struck me as small when considered with regard to the size of the bird and its nest. In 1868 I asked Mr. Brookes, the well-known ornithologist of Etawah, to look out for nests of this species. On December 13, 1869, he wrote to me saying that he had found several nests containing one, two, and four eggs, the last number appearing to be the full complement. The first egg he obtained in the middle of October, but after that date he could discover no more; so that I infer that the eggs I took must have been laid unusually late. Mr. Brookes also remarked that the eggs were very uniform in size.

The position chosen for the nest is usually the top of the highest tree. It may be not unfrequently observed in a huge solitary Seemul- or Cotton-tree, rising some 100 feet from the grassy plain, and visible for miles round. The nest is composed of a mass of sticks and boughs, to which is added a little coarse grass. It is most difficult of access, many of the boughs being from a thorny *Acacia*, which grows in abundance in the neighbourhood. The birds perch either on the nest or on the tree, and stand out in bold relief against the sky, forming a striking object in the landscape.

The nests are used by other birds; a large Fishing-Eagle (*Haliaëtus leucoryphus*) or Vulture (*Gyps calvus*) will sometimes take possession at a season when it is not required by the Storks. These leave various traces of their occupation, rendering it somewhat doubtful to which species to ascribe the rightful ownership, and which was the original builder of the structure.

I am,
Yours &c.,
CHARLES HORNE.

Auchnaba House,
Loch-Gilp Head, N.B.
20th December, 1870.

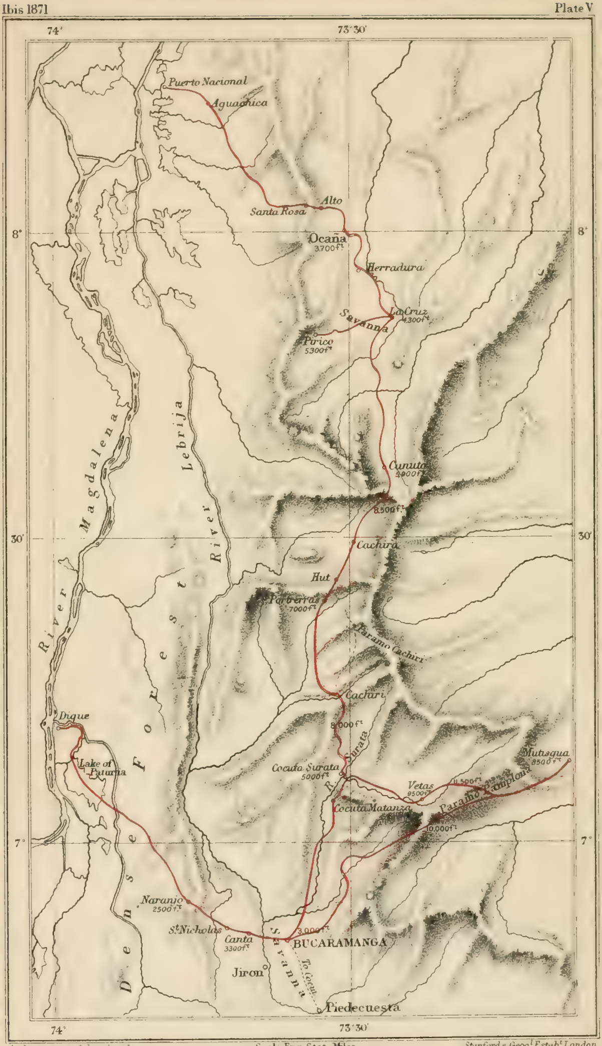
SIR,—It may interest some of the readers of 'The Ibis' to hear that a Quail's nest, with twelve eggs (eight of which are in my possession), was taken at the end of July last in the island of North Uist. The bird was captured on the nest, and the breast-bone sent to me. A Knot in summer plumage was also sent to me at the same time from the same island.

I am,
Yours &c.,
J. W. P. ORDE.

Chislehurst, Jan. 11, 1871.

SIR,—Dr. Jerdon has kindly informed me that he considers *Prinia albogularis*, nob., Ann. Nat. Hist. ser. 4, vol. v. p. 219, = *Prinia hodgsoni*, Blyth, J. A. S. B. vol. xiii. p. 376. And I wish to add that *Ephialtes jerdoni*, nob., *tom. cit.*, p. 417, = *Scops malabaricus*, Jerdon, Madras J. L. & S. xiii. p. 119.

I remain,
Yours obediently,
WALDEN.


74°
73°30'
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7°
Puerto Nacional
Aguachica
Alto
Santa Rosa
Ocaña 3,700 ft.
Herradura
La Cruz 4300 ft.
Savanna
Pirico 5300 ft.
River Magdalena
River Lebrija
Dense Forest
Cunuta 5000 ft.
8,500 ft.
Cachira
Hut
Portreras 7000 ft.
Paramo Cachiri
Cachiri
8,000 ft.
R. Surata
Cocuta Surata 5000 ft.
Mutisgua 8500 ft.
Vetas 9500 ft.
11,500 ft.
Paramo Pamplona
Cocuta Matanza
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Stanford's Geog.l Estab.t London

THE IBIS.

THIRD SERIES.

No. II. APRIL 1871.

IX.—*Notes on some of the Birds of the United States of Columbia.*

By Claude W. Wyatt.

(Plate V.)

Before commencing a list of these birds, I shall endeavour to give the readers of 'The Ibis' some account of that part of the United States of Columbia which forms their home, and the route we followed.

It had for a long time been my wish to visit South America, and to see some of those birds which are only known to us in England by our museums and books, alive in their native forests. To carry out this wish, I left England towards the close of the year 1869, and spent three months (January, February, and March, 1870) in the United States of Columbia, a country of great interest to the ornithologist, and one which comprises many varieties of climate, from the intense heat of the seething forest-clad valleys of the rivers Magdalena, Cauca, and Atrato to the region of everlasting snow on the Andes. All our time, with the exception of our journey up and down the Magdalena, was spent on the eastern Cordillera of the State of Santander, between latitudes 6° 45′ and 8° N., for the most part in a delightful climate. At some altitudes heat and cold are both unknown.

When we arrived, the rainy season had been over for two months, and most of the birds were either in, or fast assuming, their best plumage.

The rainy season, as a general rule, commences in April, and continues up to the end of October; this, however, is not always the case. Occasionally, I believe, it lasts nearly up to the end of December. Some parts of the country, too, are more subject to rain than others.

Considering how short our stay in the country was, our list of the bird-fauna, even of the comparatively limited district visited by us, must necessarily be very imperfect. Any one who has collected in tropical countries is aware of the difficulties one has to contend with in the dense forest. 210 species will be found to be enumerated in the following list; and I think I may say, without fear of exaggeration, that we either shot and lost, or saw and could not shoot, a hundred species, of which we have no specimens.

It may, perhaps, be worth while to mention here, for the benefit of any one who may hereafter visit this part of South America, that a line of steamers has just been opened on the Orinoco and Meta, thereby rendering accessible the country of the head-waters of these two rivers, and forming another route to Bogota. The boats ascend the Meta to within 60 miles (a four days' journey on mules) of Bogota; and the time occupied from Angostura, on the Orinoco, to the landing-place on the Meta, we were told, was seven days.

It was at day-break, December 22, after we had been playing at "pitch and toss" all night, as the sailors had consolingly foretold, we first sighted the land of our destination. The mouth of the Magdalena had just been crossed, and the "Shannon" was rolling in a heavy sea some thirty miles from land. In front of us lay the northern coast of South America, and the isolated group of mountains known as the Sierra Nevada of Santa Marta.

Very little seems to be known about this mountain. Its height has been estimated to be as much as 24,000 feet above the level of the sea. The Admiralty chart of the coast gives it an elevation of about 17,000 feet. People say that the only possible way to the Nevada is by Valle Dupar (a place situated at the foot of the mountain, on the southern side), and thence by an Indian village, St. Sebastian, which was visited by a friend of mine five or six years ago. This village is at an altitude of about 6000 feet. The Nevada, it is said, is two days' journey further on. In making an ascent, a tent would be necessary, as on the high ground it would be intensely cold, and there are no habitations of any sort. It would, I think, be a difficult mountain for an ornithologist to work. As there are no roads for mules, men would be required to carry one's luggage, and there would be very great difficulty, I expect, in obtaining them. Dull red and grey clouds were overhanging the mountain as we viewed it from the deck of the 'Shannon' in the early morning, which is the only time, we were told, when the outline is visible; but its snowy cap and forest-covered sides were alike lost in a dark blue haze.

A few hours later, our voyage of six and twenty days was over, and we cast anchor in the clear water of the little bay of Santa Marta, in front of a sandy shore and a white Italian-looking town, which was shut in by hills, the spurs of the Sierra Nevada.

That day, as soon as the sun began to decline, we visited the Mimosa and Cactus thicket at the back of the town, and made our first acquaintance with the living avifauna of South America. Amongst the birds we shot were *Saltator olivascens, Sycalis brasiliensis, Dendroplex picirostris,* and *Heliodytes griseus.* The last-named bird was building its nest high up in a gigantic Cactus, the Mocking-bird (*Mimus melanopterus*) was ever changing his note, and a little grey Woodpecker, with a red head (*Centurus tricolor*), was hard at work on the Cacti.

The few hours we spent in this thicket was all we could allow ourselves for seeing the Ornis of the neighbourhood of Santa Marta, as we had decided to make our way, as soon as possible, up the Magdalena to Ocaña; and on the following day we left on mules for Cienaga, an Indian village some 20 miles off, where the little steamer, plying between Santa Marta and Baranquilla, was to take us up.

Cienaga is situated (as its name denotes) near a lagoon and marsh. Herons, Egrets, and Stilts were wading about in the shallows when we visited it in the early morning; large flocks of Tringidæ were feeding on the mud; and, in one corner, five brown Pelicans (probably *Pelecanus fuscus*) were floating lazily on the surface of the water. There seemed to be also a great many birds amongst the Cacti thickets on the plain between the lagoon and the foot of the Sierra Nevada; we never saw, I think, so many species congregated elsewhere. We had hoped to pay Cienaga another visit upon our return journey at the end of March; but, owing to delays in the upper country, our intention was never carried out. It is a cooler spot than Santa Marta. The thermometer fell to 70° Fahrenheit during the night, while at Santa Marta it stood at 82° night and day.

The steamer from Santa Marta to Baranquilla, after a passage of about two hours in the open sea, which is made in the early morning, when there is always a dead calm, proceeds through a series of lagoons and caños. Caños are winding passages amongst the mangrove forests, connecting one lagoon with another. They are so narrow that the boughs of the trees often touch the steamer on both sides at the same time; and, owing to the defective steering and steering-apparatus, frantic charges are constantly made at the bank, the vessel crushing into the mangroves, whose boughs sweep the deck, while the passengers rush from one side to the other, holding up pieces of lime- and orange-peel to their noses, as a slight mitigation to the dreadful odour arising from the black mud which is stirred up.

These lagoons abounded in Alligators; and the shore was resorted to by various wading birds. In the course of the day, we passed through thousands of acres of swamp, covered with aquatic plants, amongst which we saw the little water-lily-leaf-walking Jacana (*Parra hypomelæna*), and put up two species of Bittern, *Tigrisoma brasiliense* and *Butorides cyanurus* (Vieill.).

There are two steamers each month, which carry the mail from Baranquilla to Bogotá, and *vice versâ*; or, rather, they try to do so, their success depending upon the state of the river and the keeping clear of snags. Steam has been established eighteen years on the Magdalena, during which eighteen steamers have been lost. The navigation is rendered very difficult from the shallows and constant shifting of sand banks; the boats are for ever running aground, and are sometimes detained for weeks until there is a rise in the river.

Soon after leaving Baranquilla, we had a fine view of the snowy peak of the Sierra Nevada; but with the banks of the

Magdalena I was much disappointed. The birds we saw as we went along were Herons, Egrets, Terns, Kingfishers, and Maccaws, the gaudy plumage and long tails of the latter rendering them striking objects.

After a journey of three days, we landed at Puerto Nacional, not sorry to leave the heat and mosquitoes of the river. The latter were not so numerous as I had been led to expect; but we were told, and afterwards experienced it, that they occurred in greater or smaller numbers according to the time of year.

At the Puerto, after some delay, we obtained five mules, to take ourselves and our goods to Ocaña, a journey taking a cargo-mule two days and a half. A cargo-mule seldom travels more than fifteen miles a day. For the first few miles our road lay over small savannas, tracts of open grassy country sprinkled with a few stunted trees, or through woods; we did not enter a forest-region until we began to ascend tbe mountains. On the savannas the long-tailed Flycatcher (*Milvulus tyrannus*) was very common, while hanging from the boughs of the stunted trees were old nests which, I expect, once belonged to these birds. On one of the savannas, we shot *Urubitinga meridionalis* and *Buteogallus æquinoctialis.* We never met with either of these fine birds again. In a wood at the foot of the mountains, we shot the little *Dacnis leucogenys.*

In the evening, after we had been ascending the mountains all the afternoon, we stopped at a shed in the forest, under which we hung our hammocks for the night. We were not sorry to have reached the Tierra templada, and to be able to breathe more freely than we had done in the valley below; the mosquitoes also were gone; but their place was taken by sandflies, which congregated in great numbers on the banks of a dashing stream hard by. To be totally free from the attacks of insects is a thing almost unknown in Columbia, except at an altitude of about 9000 feet and upwards, where it is too cold for such plagues to exist. I do not mean to say that they are attacking one all day (though in some localities they do even this); but every night, whether you may be sleeping in a house, hut, shed, or in the open air, one sort or other will find you out—mosquitoes in the low country, fleas and sandflies amongst the mountains. There are other insect plagues besides these, but they are not often met with.

The road from the river to Ocaña crosses a range of mountains some 6000 feet in altitude, and is by far the best road or mule-track which we traversed in Columbia. As we zigzagged up we were constantly looking back upon grand views of the Magdalena valley, and the central range of the Andes beyond it. Here too, for the first time, we saw the primeval forest, as we had often imagined it, in all its magnificence—a forest which, in all probability, had never fallen, save by natural decay, ever since it was said "Let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit after his kind, whose seed is in itself upon the earth." We could look over, and, for a very little way, into it; but to enter it was an utter impossibility, both from the density of the vegetation and the inequality of the ground. Upon reaching an altitude of 4000 or 5000 feet, we looked down upon deep dells of most beautiful vegetation—dells which seemed to have no bottom, and out of which, above a canopy of *Bambusaceæ*, sprang graceful tree-ferns. The banks of the road were covered with beautiful ferns and lycopods; and the trees, though they were not of any great size (they were far too thick for that), were draped with hanging mosses, creepers, and parasitical plants to a much greater extent than we ever saw afterwards. This was probably owing to the moisture from the clouds which generally envelope this part of the mountains. But such sights as these are few and far between, and one may travel for weeks without seeing vegetation in such beauty as that which I have been endeavouring, though vainly, to describe. It was not, however, a very good place for us. Not that birds did not exist, but to see and shoot them we found to be difficult; while to get them when shot was impossible, unless they fell from a tree overhanging the path.

Soon after crossing the ridge, the beautiful vegetation gives place to underwood and scrub; and from the summit we looked down upon a rolling country, range after range of bare, desolate mountains and valleys. A greater contrast than the two sides of this mountain-range presented could hardly be imagined.

In one of these valleys Ocaña (which we intended to make our headquarters while we explored the country round) is situated, standing at about 3700 feet above the level of the sea.

Through the kindness of Señor Quin, to whom I had a had a letter of introduction, a house looking into the Plaza was taken for us half an hour after our arrival, and a young man's services procured to load and feed the mules, and to make himself generally useful during our expeditions. Our arrival was quite an event to the good people of Ocaña; and how the two Englishmen came and took the house on the Plaza, and did nothing but shoot little birds for nearly a month, will probably be long remembered by them.

I would here venture to recommend any future visitor to Columbia to take a goodly supply of preserved meat from England. Beef, such as it is, can be obtained at places like Ocaña and Bucaramanga; but to cook it entails a great many difficulties, and it is only just palatable when done; and while visiting the best parts of the country, or going from town to town, which often takes a fortnight or more, preserved meat is absolutely necessary. A plantain and a little Indian corn makes a pretty good dinner for a Columbian muleteer, but is hardly sufficient for a hungry Englishman. But I must apologize for this digression.

The country around Ocaña is very bare and desolate; but the banks of small streams, which occur here and there, are generally fringed with vegetation. One of these streams runs past Ocaña, and supplies it with water. By the side of it we shot a good many birds, amongst which were three species of Humming-birds. These, however, were not in good plumage. The nesting-season was just over, and there were a great many young birds. This was about the middle of January. By the beginning of February they were in better plumage. We had an opportunity while here of seeing the Humming-bird feeding its young, which is performed in the same way as it is by a Pigeon. A young *Chlorostilbon hæberlini* was sitting on a coffee-shrub, which grew under a large tree, around the blossoms of which the Humming-birds congregated. The old bird came, and, having first swallowed the food herself, ejected it into the mouth of the young one. We afterwards caught the young one in a butterfly-net.

We stayed at Ocaña for more than three weeks, during which time we made three different excursions, each excursion occupying from four to five days. Twice we ascended the mountain-range which we had crossed while coming to Ocaña, and on the first occasion put up at a hut near the summit, called Alto, and on the second at Santa Rosa, a hut situated lower down and on the Magdalena side of the range; but the forest was too thick for us to do very much: we shot, however, the rare Thrush *Turdus euryzonus*, *Tanagra auricrissa*, two or three species of Humming-birds, and a few other birds. Our third excursion was to Herradura, a place consisting of half-a-dozen huts, and distant only three or four hours' journey from Ocaña. Here we found a little wood consisting chiefly of fine and large trees. It was bounded on one side by a small and shallow river, the Rio D'Oro; thence we went on to La Cruz and Pirico, the former a village situated in a large savanna, the latter the name of three or four huts situated at an altitude of about 5300 feet above the level of the sea, and about 1000 feet above La Cruz, and on the same ramification of the mountains as Alto, but further to the south. Here we found a Humming-bird's nest.

The nest was that of *Panychlora aliciæ*, and was built in a briar which grew close to one of the huts, so close that it was sometimes enveloped in the smoke which escaped through some holes in the wall while cooking was going on inside. It was a beautiful little nest, built of cotton, which probably came from a plant which grew near the hut; the outside of it was covered with lichen; and it contained two unfledged nestlings. The duty of feeding these seemed to devolve entirely on the hen bird, who was constantly going to and fro with food. The cock did not make his appearance, though we watched the greater part of an afternoon, not even when a charge of sand from my gun knocked the hen bird down, and we took the nest. About six inches above this nest, and on the same stem, there was another, which looked as if it had been deserted before it had been quite finished.

We were told that long-tailed "Colibri" (as the people call

Humming-birds) were to be met with here, but we were not fortunate enough to fall in with them.

The bare country around Ocaña was sprinkled with tufts of grass and a plant with a yellow blossom (*Calea,* probably *C. primifolia*), and reminded me of parts of Palestine; but the *Saxicolinæ,* so conspicuous in such localities there, were here wanting. The two scavengers (*Cathartes aura* and *C. atratus*), *Milvago chimachima,* and *Tinnunculus sparverius* seemed to be its only feathered inhabitants, the two latter feeding on lizards, of which there was a great supply.

We had intended, when we left Ocaña, either to return to the Sierra Nevada or to make our way to Cocui, about 100 miles further south, where the mountains rise to an altitude of perpetual snow; but we had, for several reasons, to give up the latter, and had decided to go to Aguachica, a small village in the Magdalena valley, situated just at the foot of the mountains, and afterwards to return to the coast and the Sierra Nevada; but, just before we started, our man came to say that he should not go with us into the low country as he was afraid of fever. We found out afterwards that there was nothing unusual in this. It is always a matter of extreme difficulty to induce any of the inhabitants of the healthy mountain-regions to descend to the Magdalena valley. So we had to give the man up, or to alter our plans; and as he had been with us for nearly a month, and had got accustomed to our ways, we chose the latter, and on February 2nd we started with our man, a peon, and five mules for Bucaramanga, intending to cross the paramo of Cachiri.

Our course lay by La Cruz, thence southwards through a bare, desolate country until we reached a hut called Canuto. Of all the roads I ever travelled, the road from Ocaña to Bucaramanga is by far the worst. It is impossible for any one who has not witnessed it to conceive the amount of climbing, tearing, and tumbling our mules underwent before we reached our destination. In one place we had to send a man on to make the road wide enough for our cargo-mules to pass.

On the third day we entered a fine forest-country, going up to an altitude of 8500 feet, a region of oak forests, and diving down again into valleys clothed with the dense vegetation of the tropics, then again ascending to a country of evergreens and shrubberies. Change was constant; we were ever going up or down, sometimes crossing valleys 2000 feet in depth.

Our intention of crossing the paramo was never accomplished; for our men, who were as much afraid of the cold as they were of the heat, purposely led us by another and more circuitous route; and we must, I think, have skirted along the western side of the paramo, instead of crossing it. From the moment we left Ocaña, we fancied our mulemen were "up to some dodge;" and it became more and more apparent as we advanced. The paramo was ever in front of us until we arrived at Cachiri, where we asked a man where the paramo was, and he pointed to our backs. We could not, however, regret this detour, as we had been travelling through a magnificent forest-country, the home of the Trogons (*Trogon personatus* and *Pharomacrus auriceps*) and the Peruvian Manakin (*Rupicola peruviana*). The latter, I believe, has not been ascertained to occur so far north before.

The first hut we stopped at in the forest country was called Canuto, three days' journey from Ocaña. We stayed there for a couple of days. The altitude was nearly 6000 feet. Mosquitoes were very troublesome; but this was the only occasion on which we met with them amongst the mountains. Around the hut grew some trees (*Laplacea*, probably *L. speciosa*) bearing a white waxy blossom, which seemed to be very attractive to Humming-birds, especially a single tree which stood on the clearing in front of the hut. We obtained here six species of Humming-birds, three of which we never met with again. The tree itself we never saw elsewhere, though it is possible that after the blossoms were over we may have overlooked it.

At this place also we were much puzzled by the ruff of *Pyroderus granadensis*, which a little girl, the daughter of the owner of the hut, was wearing in her hat. It had been cut out without showing any of the black portion of the plumage. The young lady's father said he could take us to the place where we could get the bird. So the next morning, at daybreak, we set off with him, and, after an hour's walking and scrambling, stopped on the side of a hill in a forest consisting of oaks (*Quercus tolimensis*), which overhung a park-like grassy valley, interspersed with trees and shrubs, amongst which ran a small dashing stream. Under these trees we took up our station, but to no purpose; the bird we wanted was not to be seen that morning, though, on our way back, one of us on one side of the valley, and the other on the other, I believe we heard something of it. About 4 o'clock in the afternoon we returned to the same place, the bird never being seen, we were told, except in the early morning, or just before sunset, and again took up our station under the oaks.

After we had been about half an hour, we heard, far up in the forest above, a sound more like the grunt of an organ than any thing else. In another minute there was another grunt, and a much louder one; the bird was evidently coming; and our guide motioned us forward. Grunt—grunt—grunt; bang—bang! and a wounded bird flew past, which was soon secured by our guide, and proved to be *Pyroderus granadensis*. Afterwards I had the misfortune of having my gun snap twice at another of these birds. The crop of the one we had obtained was found to be empty. It was evidently coming down to its evening meal, which, I fancy, would consist of the acorns with which the ground was strewn. Our guide, however, could not tell us any thing about it. The bird probably sits up in the tops of the trees in the thickest part of the forest during the daytime.

Another of the huts we stopped at was called Portrerras by our muleteers; but whether this was its real name is, I think, doubtful. I had been informed at Ocaña that the road over the paramo went by Portrerras. We arrived before our luggage and the mulemen, and were told by the owners of the hut that Portrerras was further on; but as soon as our men arrived, there was, I think, an understanding between the two parties that it should go by that name, in order to persuade us that we were going the right way. On the map I have given its position under this name. It is nearly six days' journey from Ocaña; and the elevation is about 7000 feet, where the zone of Quernales commences. Amongst these we could get about without much difficulty, and we added several fresh species to our collection. Up the trunks of trees hovered the beautiful purple-throated Humming-bird (*Heliangelus clarissa*); *Panoplites flavescens* flitted amongst the foliage; the forest resounded with the cries of the noisy Toucan (*Andigena nigrirostris*), whose bodies were considered a dainty morsel by our muleteers, and with the tapping of the Woodpeckers, to whose sturdy strokes on the decayed timber I was never tired of listening; Squirrels also added not a little to the general clamour, and the whole place, when we visited it in the early morning, seemed to teem with animal life. This, however, is far from being the case in general. On the contrary, we often rode mile after mile, hour after hour, in these grand forests without seeing or hearing any thing of their feathered inhabitants; and this, perhaps, is hardly to be wondered at when we consider the immense range which they have.

It was a few hours after leaving this place that we fell in with the large Trogon (*Pharomacrus auriceps*) and the Peruvian Manakin. To see such gorgeous birds alive amidst the beautiful vegetation of their native forests is a sight never to be forgotten. They may, however, be easily overlooked, as, unless disturbed, they generally sit motionless on the bough of some tree, hidden among the foliage. *Pharomacrus auriceps* was sitting in a palm tree, and we did not know what bird it was until we saw it falling into a dell of gigantic ferns—ferns with fronds of some fourteen feet length. The peon, who was close at hand, made a frantic dive into the ferns and disappeared, followed by myself. He had, however, the start of me, as a minute afterwards I found myself flat on my face, and my gun several yards in front of me. After another scramble, and another fall, most of the readers of 'The Ibis' will, I think, be able to fancy what my feelings must have been when I saw *P. auriceps* struggling on the ground under the clumsy grasp of the peon. While I was trying to get out of the ferns (no easy matter), W. heard the note of the hen bird, and brought her down from a neighbouring tree; just, however, as he was stooping to pick her up, she fluttered away into the forest, where to follow was an utter impossibility.

It was in this same dell, at the bottom of which ran a dashing stream, whose sides were clothed with magnificent forest-trees and vegetation of the densest description, that I shot the Peruvian Manakin. I was riding along in advance of W., who was in pursuit of a *Trogon personatus,* when a few yards to my right I caught a glimpse of what I took for the moment for *Pyroderus granadensis.* Afraid to get off for fear of frightening the bird, I tried to stop my mule, and to bring him round so as to obtain a shot. The mule (Columbian mules are more obstinate, I think, than those of any other country; "Keep one spur always in, and the other never out," Columbians say) of course persisted in going on, and the bird escaped. I then got off, and, on looking round, saw a patch of yellow amongst the foliage, which I immediately fired at and brought down. It was nearly ten minutes before I could find the bird; and I was just going to give up the search, when I found, to my great astonishment, a splendid specimen of *Rupicola peruviana* lying on its back at the bottom of a steep bank. The bird was in its best plumage (Feb. 10th) and was evidently about to nest. Its crop was found to be full of seeds. The bird I had seen first was no doubt its mate.

The *Datura,* with its long white hanging flowers, was not uncommon in some places in these forests; and though each flower was full of little insects, we never saw a Humming-bird visit them, except on one occasion, and then only for a moment.

But our pleasant ride was now coming to an end, and we emerged from these mountain-forests into a narrow valley, along which ran a small rapid river. The first place we came to was Cocuta Suratá, whence a road crosses a paramo to Pamplona. A ride of thirteen hours along this valley brought us to Bucaramanga, which is situated on a savanna surrounded by mountains about 3000 feet above the level of the sea. The climate of Bucaramanga is very warm, considering its altitude. It seemed to us, in fact, to be little better off than Santa Marta in this respect, though this may have been owing to our having just descended from one of the most beautiful climates in the world. Most of our time here was spent in packing and drying our bird-skins, or in preparing for our next trip; but we managed to get a few birds outside the town on the savanna, where there is, in one part, some scrub and underwood. One visit to this locality would probably suffice most people; for the bushes swarm with the Garapáta, a blood-sucking tick (*Ixodes sanguisuga*), and it is impossible to get about without being covered with them.

We arrived at Bucaramanga early in the week, and found it impossible to obtain mules to take us on, either to Cocui or across the paramo to Pamplona; so we decided to spend a couple of days at the small village of Canta, distant a short day's journey from Bucaramanga, on the road down to the Magdalena; and afterwards to return and try again.

The savanna of Bucaramanga is bounded on the west by a deep ravine, which we crossed, and, having ascended the mountains on the other side, looked back upon the savanna and the mountains of Cachiri and Pamplona; while in front of us lay a country intersected by ravines and water-courses, and partially covered with forest.

As the immediate neighbourhood of Canta, where we arrived on the second day (having been benighted, and drenched in a violent thunderstorm, and having lost our way), did not look very promising in an ornithological point of view, we went on to San Nicolas, a hut about an hour's ride further on. This is where the dense forest covering the sides of the Magdalena valley commences and continues almost without intermission down to the river, changing in character as the elevation decreases. The birds here were quite different from those we had before met with; amongst those we shot were the rare yellow-headed Parrot *Caica pyrilia* and *Ramphastos citreolæmus.*

On our return to Bucaramanga we succeeded in getting a couple of horses and one mule and a peon (neither our man from Ocaña nor the one who went with us to Canta could be induced to face the cold of the paramo) for an excursion over the paramo of Pamplona to Matisgua. Cocui we had been obliged to give up. It would have taken us three weeks to go and return, though, as the crow flies, it could not be more than 50 or 60 miles off. The rainy season was coming on, and we had already had some heavy showers during the night. We were also obliged to be at Santa Marta by March 28th. Our provisions and small shot were both coming to an end. We returned from Matisgua, crossing the paramo again, but in another direction, by Cocuta Matanza.

This excursion led us through a different sort of country from that which we had before traversed. Our road, after leaving Bucaramanga, lay up a deep and narrow valley, sometimes by the side of, sometimes above, a dashing stream, which had its source on the paramo. The upper parts of the mountains were thickly wooded in many places; and the sides of the valley, where there was soil enough for any thing to find a footing, were covered with scrub and underwood. A journey of two days up this valley brought us to a hut situated just under the paramo, at an elevation of about 9500 feet. The country here was open, with a little underwood and a few oaks (*Quercus tolimensis*). We stayed for a couple of days, and added two more species of Humming-birds to our list—*Metallura tyrianthina*, and the long-tailed *Lesbia amaryllis*. The beautiful blue Jay (*Cyanocitta armillata*) we met with here for the first time, also *Zonotrichia pileata* and *Quiscalus subalaris*. We could scarcely believe that we were only a few days' journey from the seething Magdalena valley. A patch or two of barley near the hut reminded us of Europe. The days and nights were cold, and we saw very little of the sun, though it did occasionally make its appearance through the mist and clouds in which we were generally enveloped.

Our next move was over the paramo, just below which grew in great abundance the yellow *Calceolaria* and purple *Iris* of our gardens. We crossed in a biting wind and drizzling rain. Our muleteer looked thoroughly miserable, and we no longer wondered at the dislike of these men to a paramo. At an elevation of 10,000 feet, where the region of paramos commences, the Andes of Columbia in general appearance much resemble the fjelds of Norway. The paramo of Pamplona reminded me of the Dovre fjeld, and I was transported in imagination from within seven degrees of the equator to the far north—a bare desolate country of moss and tufts of grass, the dark grey rock occasionally cropping out, and the ground strewn with stones and boulders. The only birds we saw were a Pipit (*Anthus bogotensis*) and the little Kestrel, *Tinnunculus sparverius*. Hanging to the side of a hut we passed was a Condor, of which enough remained to enable us to identify it. We reached Matisgua in a pouring rain. This village is situated in a deep valley at an elevation of about 8500 feet. We could see from here the road to Pamplona winding up the mountains on the other side of the valley, and were told that there was another paramo to be crossed before reaching that place, which was about a day's journey further on.

After spending a day at Matisgua we again ascended the paramo, keeping a sharp look-out for birds; but to no purpose, until about 3 o'clock in the afternoon, when, just as we were beginning to think that birds could not, in spite of what we knew to the contrary, exist on a paramo, we shot a *Synallaxis,* which proved to be a new species, creeping about amongst some stones, and *Phrygilus unicolor.* Just before reaching the highest part of the road, about 11,500 feet in elevation, we saw a Condor. After crossing the ridge and beginning to descend, a Humming-bird made its appearance; and almost immediately afterwards the place seemed to swarm with them. It was a sight I shall never forget. Around us were shrubs and bushes, all in full blossom. A Barberry (*Berberis goudoti*) with its orange-coloured flowers, *Vaccinium montinia,* with its flowers of pink, and *Miconia rhamnoidea,* with its flowers of white, were the shrubs around which they congregated in greatest numbers. They consisted of three species; of these the little copper-coloured *Aglæactis cupreipennis* was the commonest. We found its beautiful lichen-covered nest, rather a large one for the size of the bird, in one of the shrubs. It was placed upon a bough, without a fork or even a twig to give it additional strength and security. The other two were *Oxypogon guerini* and *Ramphomicron heteropogon.* We shot them with so small a charge that sometimes they were only just knocked down, and we held them alive in our hands for a few seconds. A more beautiful and wonderful little creature than *Oxypogon guerini* there can hardly be when it erects its crest and shoots out its emerald gorget. We obtained here also the beautiful but common *Pœcilothraupis lunulata, Conirostrum rufum,* and *Buarremon pallidinuchus*; and by the side of a little stream, which fell over grey lichen-covered boulders into little eddying pools, we shot the little Dipper peculiar to the Andes of Columbia and Ecuador, *Cinclus leuconotus*. We followed the course of this stream down a deep valley, and left it a small river in the Cocuta valley, along which we returned to Bucaramanga well pleased with our visit to the high regions.

There are two different routes down from Bucaramanga to the Magdalena, each striking the river at a different point. One of these passes through a country inhabited by the Opon Indians, who are so called from the name of a small river which flows into the Magdalena. They live in the forest of the Magdalena valley, and, from all accounts, seem to be little better than animals. A boy was captured not long ago, and is now living in Bucaramanga; with this exception, so far as I could ascertain, they have never been seen except from the decks of the steamers which ascend and descend the river. People, however, occasionally get shot by them, and their bodies are found stuck full of arrows between eight and nine feet long. It is said that these Indians are great cowards and never attack a party. Another road has just been opened by an enterprising Englishman, the only one we met, who has cut and made a path through the primeval forest. The difficulties to be encountered in doing this can hardly be understood unless one has really seen such forest and the nature of the ground. No Indians have been met with on this road, the forest being, probably, too thick even for them.

This road we decided to follow; and as no one could tell us how long it would take to go down, we allowed nearly a fortnight. It is, however, only a six days' journey.

We left Bucaramanga, March 2nd, and spent one day at S. Nicolas again, and two at Naranjo. This was the last place we came to, and consists of a small village, near which the mountains sink abruptly to the Magdalena valley. Among the birds we shot here were *Melanerpes pulcher*, a Woodpecker lately new to science, and *Phœnicothraupis gutturalis*, hitherto known only by some skins in the British Museum.

On March 11th we were again looking down upon the Magdalena valley. Some 1500 feet below us lay a sea of primeval forest extending as far as we could see, broken only by the Magdalena winding like a silver thread some thirty miles off, and by a spot of cleared ground, on which a shed had been erected for the use of travellers. Two years ago this forest had never been penetrated by man.

But the country, which we thought to be flat as we looked down upon it from the mountains, proved very different when we traversed it. We were ever crossing valleys, until we were within a day's journey of the river. Birds were scarce and difficult to get at, as the forest was impenetrable. Among those we shot were the rare Puff-birds, *Monasa pallescens* and *Bucco pectoralis,* and *Trogon chionurus.* The noise here in the early morning was truly astonishing, and very different from the early morning in the mountain-forests, where the notes of various birds alone break the stillness; here the Peccary, Jaguar, and Monkeys were amongst the denizens. One morning as we rode along, we heard amongst the various cries and notes, what we took to be the toll of a Bell-bird (*Chasmorhynchus*). It sounded to us, however, more like the striking of a large clock than the tolling of a bell. Each note or strike was perfectly distinct; but there was no lengthened interval between*.

And who can say what rarities may not exist in these forests? But probably no naturalist will ever pay them more than a passing visit. The heat, insects, and malaria arising from decaying vegetation render life in them hardly supportable; and I think the wish of every one will be to get out of them as soon as possible. No one can understand, unless he has been in such a place in such a climate, what the longing is to see the sun sink and the dread of seeing it rise again. "What is a man to do in a climate like this?" said the Venezuelan store-keeper at Puerto Nacional, "We live like dogs, and cannot help it."

We had to wait for four days at the lake of Paturia. The early morning, and the evening, from 4 to 6 o'clock, we spent in shooting, going about in canoes. The remainder of the day it was too warm to stir out. One evening, an hour after the sun had set, the thermometer marked 90°. From the lake we canoed through a series of lagoons and caños to the Dique, the name of a miserable hut on the banks of the Magdalena, where, under a shed smothered in a plantation of Plantain, we were destined to wait, eaten up by mosquitoes, for nearly a week. There was not water enough in the river to allow the steamer to come down. At last, to our great relief, we heard her whistle, and ten minutes afterwards we were rushing down the stream on our way to the coast, while wondering passengers speculated as to what could have brought two Englishmen to the slopes of the Andes and the forests of the Magdalena.

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* [No Bell-bird has yet been obtained in this district. If *Chasmorhynchus* really occurs here, the species would not be the true Bell-bird of Guiana, *C. niveus,* but more probably either *C. variegatus* of Venezuela, or *C. tricarunculatus* of Veragua—possibly, however, a new species!—Ed.]

[To be continued.]

X.—*Contributions to the Ornithology of Egypt.*

By Captain G. E. SHELLEY, F.R.G.S., F.G.S., &c.

[Continued from page 54.]

74. RUTICILLA PHŒNICURA (L.). Common Redstart.

Plentifully distributed throughout Egypt and Nubia. I shot it in the Delta in the beginning of February; but it is not abundant before the end of March.

75. RUTICILLA TITHYS (Scopoli). Black Redstart.

According to Mr. S. S. Allen (Ibis, 1864, p. 237) this bird arrives from its winter quarters in the south in April; but Mr. E. C. Taylor (Ibis, 1867, p. 61) says that it is "resident in small numbers throughout the winter, frequenting ruined buildings." I never met with this species myself.

76. ERITHACUS RUBECULA (L.). Robin.

Plentiful in the Delta.

77. CYANECULA SUECICA (L.). Blue-throated Warbler.

I believe that there is only one species of Blue-throated Warbler in Egypt; for although some specimens have a white spot on the throat, and some a rufous one, I have obtained others with this spot half red and half white. It is an extremely abundant bird in some parts of the Delta, and is very generally distributed throughout Egypt and Nubia, wherever the vegetation grows to the height of several feet.

78. Philomela luscinia (L.). Nightingale.

Although the Nightingale may occasionally be heard in Egypt, it is far from common. I only once saw a pair, and heard their well-known notes while reposing during the heat of the day in a small wood near Bedreshayn, towards the end of March.

79. Aedon galactodes (Temm.). Rufous Sedge Warbler.

This bird appears in Egypt towards the end of March, and leaves again in September, during which time it may be frequently met with wherever low thick covert affords it suitable shelter. It is essentially a creeping bird, rarely showing itself in the open, and when disturbed always flying to the nearest shelter. It is very partial to banks where the rich and prickly herbage affords it a safe retreat. In Nubia it is extremely abundant, where it may frequently be seen upon the ground searching for food at the foot of some thick young Date-palm. I have never observed it perch more than a few feet from the ground, being generally seen on it, where it loves to strut with tail erect, basking its plumage in the sun. It builds a thin nest of grass, similar to that of our Black-cap Warbler.

80. Pseudoluscinia luscinoides (Savi.) Savi's Warbler.

I met with this bird on several occasions between Cairo and Sioot, always in the high corn; when flushed it flies hurriedly, close over the tops of the waving crops for some thirty yards, and then suddenly dips down and is hidden. After being disturbed three or four times, it will creep among the stalks and refuse to rise again, nor will it allow itself to be driven far from where it originally started. I only brought home one specimen, owing to the very great difficulty in obtaining birds. It rises too close to be shot at at once, and then disappears suddenly; when killed is most difficult to find, as it always falls in the thickest corn.

81. Bradypterus cettii (De La Marm.). Cetti's Warbler.

Keyserling and Blasius mention the occurrence of this bird in Egypt; but I have never obtained it, although I believe I have seen it on several occasions.

82. Calamodyta schœnobænus (L.). Sedge Warbler.

Not uncommon both in Egypt and Nubia. I have shot it among sedge in the Delta, in the corn-fields of Upper Egypt, and on the banks of the river in Nubia.

83. CALAMODYTA MELANOPOGON, Temm.

This rare Warbler I shot on the 20th of February, in a marsh near Damietta, and I believe I saw a few other specimens, which being difficult to obtain, owing to the thickness of the reeds, I neglected, as I considered the species at the time to be the common Sedge Warbler, which it very much resembles. My notes on this bird, made at the time, run as follows:—"Appears to keep exclusively to thick sedge in very marshy districts; total length 5 inches, beak brownish, legs black, irides brown."

84. ACROCEPHALUS STENTORIUS, Ehr.

This large Warbler has been met with in the Delta, frequenting the thick sedge and reeds which surround some of the lakes. It has been described by Mr. S. S. Allen, an admirable figure of it accompanying the description (Ibis, 1864, p. 97, pl. i.). Mr. E. C. Taylor (Ibis, 1867, p. 63) says that it is abundant in a lake near Damietta early in April. I shot round this very lake for a whole week in the beginning of February, but did not meet with it once; as it does not winter in Egypt, it had probably not arrived.

85. CISTICOLA SCHŒNICOLA, Bp. Fan-tail Warbler.

This cheerful little bird remains in Egypt and Nubia throughout the year, where it may be met with in every green field, either watching the intruder from some more elevated plant, or pouring forth its notes as it hovers over the surrounding herbage.

A nest of this bird which I found at Memphis on the 18th of March was purse-shaped, with a small hole to admit the bird near the top; it was built in a clover-field about one foot from the ground, and contained two white eggs freckled with rufous, which were hard set. Dr. von Heuglin gives a full description of the nest and eggs (Ibis, 1869, p. 133).

86. DRYMŒCA GRACILIS, Rüpp.

I killed my first specimen of this long-tailed Warbler at Dendera, on the 25th of March, having during the previous month obtained two specimens of the next and closely allied species. I met with the present bird most frequently in Nubia;

while the next species was very abundant throughout Egypt, where it remains during the winter. All the specimens which I have seen from Egypt belong to the next species.

87. Drymœca, sp.

I cannot bring myself to consider this bird to belong to the same species as the preceding; but Dr. Tristram, to whom I showed my specimen, refers it to *D. gracilis*. It is, however, larger than my specimens of *D. gracilis*, and has a black bill and also very distinct stripes on the breast. In coloration it is altogether darker, and the whole of the shaft-markings are more strongly pronounced. I may add that the present bird is the common *Drymœca* of Egypt, whereas the true *D. gracilis* I only met with higher up the country, and is not nearly so common. I have males of each species in breeding-plumage; so that a proper comparison of the adult birds has been possible. M. Jules Verreaux, who has kindly looked at the birds, is inclined to regard my specimens as belonging to two distinct species, but, like myself, feels unwilling to describe the present bird as new until we have a larger series for comparison.

88. Sylvia cinerea, Lath.

Sparingly distributed throughout Egypt and Nubia.

89. Sylvia curruca (Gmel.). Lesser Whitethroat.

A very abundant Warbler both in Egypt and Nubia, especially from Dendera to the first Cataract.

90. Sylvia conspicillata, Marm. Spectacled Warbler.

The Rev. H. B. Tristram tells me that this bird is certainly met with in Egypt, but does not remain there throughout the winter.

91. Curruca rüppellii, Temm. Rüppell's Warbler.

I have shot this bird in Nubia, and at the first Cataract, and have seen it occasionally in other parts of Egypt. In habits it appears very closely allied to *Curruca melanocephala*. The beautiful roseate hue on the chest of a freshly killed bird soon fades.

92. Curruca melanocephala (Gm.). Black-headed Warbler.

Abundant on the islands of the first Cataract, but distributed more sparingly throughout Egypt and Nubia.

93. CURRUCA ORPHEA (Temm.). Orpheus Warbler.

I have seen an Egyptian specimen of this bird in Messrs. Sharpe and Dresser's collection. It is possibly not uncommon.

94. HYPOLAIS OLIVETORUM (Strickl.). Olive-tree Warbler.

I believe this species to be common in Egypt. Messrs. Sharpe and Dresser have in their collection a specimen of this bird collected in Egypt.

95. HYPOLAIS ELAICA (Lindermeyer). Olivaceous Warbler.

This is the most abundant Warbler in Nubia, and is not unfrequent in Egypt as far north as Dendera, below which place I have rarely met with it as late as the end of April.

96. PHYLLOPNEUSTE TROCHILUS (L.). Willow Warbler.

A winter visitant in Egypt and Nubia (Ibis, 1864, p. 237), arriving in September, and leaving in March.

97. PHYLLOPNEUSTE RUFA, Lath. Chiff-chaff Warbler.

Only met with in winter in Egypt and Nubia, and, like the last species, extremely abundant throughout the Delta, where alone I have seen it.

98. PHYLLOPNEUSTE BONELLII, Vieill. Bonelli's Warbler.

This Warbler is very abundant in the Cypress and Acacia trees of Upper Egypt, where it takes the place of *P. trochilus* and *P. rufa* of the Delta and of *Hypolais elaica* of Nubia.

99. PHYLLOPNEUSTE SIBILATRIX (Bechst.). Wood Warbler.

I shot two specimens of this bird in Egypt in April, one near Sakkara and one near Assouan; but it appears to be by no means plentiful.

100. NECTARINIA METALLICA, Licht. Yellow-breasted Sunbird.

We first met with this beautiful little bird near Kalabshee, in Nubia, where I found it tolerably plentiful. It was generally seen in pairs, but had not, I think, begun breeding by the 10th of April. It is a lively bird, rarely sitting still for long, now fluttering over a flower, now darting off to some neighbouring Acacia tree, heeding neither the peasant nor his ox as they toil together through the heat of the day. The female, a dull-coloured but graceful little bird, generally keeps close company with her partner. I have watched them sunning themselves together on some prominent Acacia twig, all the while keeping up an animated conversation in a pleasing little twittering note.

101. Muscicapa griseola, L. Spotted Flycatcher.

I only met with this bird once, in May, at Alexandria, probably during its migration.

102. Muscicapa collaris, Bechst. White-collared Flycatcher.

In 1868, towards the beginning of April, we met with many pairs of this bird between Cairo and Benisouéf; but this year I did not see it once south of Benisouéf up to the 10th of May, from which I infer that it does not come down the Nile in its migration.

103. Hirundo rustica, L. Chimney Swallow.

We shot an immature specimen of this bird in the Delta on the 25th of February, but did not see another until we reached Nubia in the beginning of April, where it appeared entirely to replace *H. riocouri*, which latter bird we did not meet with again on our downward journey until arriving at Girgeh, where the two species were equally abundant in the beginning of May.

104. Hirundo riocouri, Audouin. Oriental Chimney Swallow.

Very abundant throughout Egypt, especially in the Delta. It appears to keep more exclusively to the neighbourhood of villages than the last species.

It begins breeding about the latter end of February.

105. Cotyle riparia (L.). Sand Martin.

This bird arrives in Egypt in great abundance in March; and towards the end of April we daily observed colonies of them breeding in the banks by the river side.

106. Cotyle obsoleta, Cab.

Extremely abundant wherever there are cliffs, and at the Pyramids, but never met with far from them; consequently they are most plentiful in Upper Egypt and Nubia. They begin building by the middle of February, placing their nests under the shelter of some overhanging rock, or attaching them to the ceilings in the less-frequented passages of the ruins for which Egypt is famed.

C. rupestris (Scop.) is probably also found in Egypt.

107. CHELIDON URBICA (L.). House Martin.

I found this bird more abundant in Nubia than in Egypt, where I only met with it on three occasions, apparently passing through on its way to Europe.

108. LANIUS LAHTORA, Sykes. Bleached Shrike. Dresser & Sharpe, P. Z. S. 1870, p. 595.

This species inhabits Upper Egypt and Nubia, but is not very plentiful.

109. LANIUS PERSONATUS, Temm. Masked Shrike.

This bird arrives in Egypt towards the end of February. When I reached Dendera on the 25th of last March, it was so plentiful that I could have counted one hundred in a day, generally in pairs. In Nubia it was equally plentiful, pairs flying and chattering together in every clump of trees I passed through.

110. LANIUS AURICULATUS, P. L. S. Müll. Wood-Chat Shrike.

By no means uncommon in Nubia, but is less frequently met with in Egypt.

111. MOTACILLA ALBA, L. White Wagtail.

An extremely abundant bird throughout Egypt in the winter, but less so as the spring advances; and in Nubia, in April, I found it comparatively rare.

112. MOTACILLA LUGUBRIS, Pall. Sombre Wagtail.

This Asiatic species is confined in Egypt to the first Cataract, where, during three days, I saw seven specimens. It is a beautifully marked species, its pure black and white making it very easy to distinguish from both *M. alba* and *M. yarrelli.* Although it has selected this barren and rocky district, near where the Nile dashes over broken granite rocks in a turmoil of waters, it is by no means an unsociable bird, and rarely fails to welcome the stranger by flitting from rock to rock along the shore by the side of his "dahabeah." Its sociability was the chief cause of its safety; for the land being crowded by natives hauling at the boat prevented the possibility of my shooting it on several occasions. Its food consists chiefly of a small green beetle. It breeds in April. This bird must not be confounded with *M. vidua* of South Africa.

113. MOTACILLA SULPHUREA, Bechst. Grey Wagtail.

Mr. E. C. Taylor (Ibis, 1867, p. 63) says of this species that he saw it at Cairo in January; and Dr. A. L. Adams (Ibis, 1864, p. 22) mentions that it was met with in its usual retreats as far south as Nubia.

114. BUDYTES FLAVA (L.). Grey-headed Yellow Wagtail.

This and the next two species are generally considered to be mere varieties of the same birds; and in large series of specimens it is difficult, if not impossible, to say where the one species ends and the other begins. However this may be with birds from other localities, in Egypt and Nubia they appear to keep perfectly distinct. The true *M. flava* of Linnæus I only met with about the middle of April in Nubia, travelling north in large flocks, out of which I killed more than twenty specimens without finding the least variety of plumage, while I had found *M. cinereocapilla* one of the most abundant birds in Egypt in March, paired and apparently breeding there at that time. The true *M. flava* may be most readily distinguished by a distinct white streak, which passes through the eye, and which is absent in the next variety.

115. BUDYTES FLAVA (L.), var. *cinereocapilla*, Savi.

This is the most abundant form of Yellow Wagtail in Egypt. It is very Pipit-like in its habits, and is more frequently met with in pairs and flocks in the fields than by the water's edge. It breeds in March.

116. BUDYTES FLAVA (L.), var. *melanocephala*, Savi.

We met with this bird frequently in Nubia, about the middle of April, in flocks among the herbage by the river-side. Although we frequently shot specimens out of these flocks, we never came across a grey-headed bird among them. They were evidently migrating north at that season.

117. ANTHUS CAMPESTRIS, Bechst. Tawny Pipit.

This bird is a spring visitant. The first specimen that I saw I killed at El Kab on the 26th of February, when it had probably just arrived. It is very plentifully distributed throughout Egypt and Nubia, usually frequenting the confines of the desert, where its plumage harmonizes with the colour of the sand, rendering it hard to see.

118. ANTHUS AQUATICUS, Bechst. Water Pipit.

In looking over a collection of skins on board Mr. Baird's "Dahabeah," I saw a Pipit which I believe to belong to this species, which he had shot near the Pyramids in February.

Rev. H. B. Tristram (Ibis, 1866, p. 289) calls this a well-known Egyptian species.

119. ANTHUS CERVINUS, Pall. Red-throated Pipit.

One of the most abundant birds throughout Egypt and Nubia. Its numbers are somewhat decreased by April; but I believe it to remain on the Nile through the year.

This species in Egypt appears to take the place of *A. pratensis*, which latter bird neither Mr. E. C. Taylor nor myself ever met with.

120. ANTHUS ARBOREUS, Bechst. Tree Pipit.

Arrives about March, and is then tolerably plentiful throughout Egypt and Nubia.

121. CERTHILAUDA DESERTORUM (Stanley). Bifasciated Lark.

I only twice met with this Lark in Egypt—once near Sakkara, and once on the desert, near Kom Ombos. Yet Dr. A. L. Adams (Ibis, 1864, p. 24) says that it is not uncommon in small flocks along the edge of the desert from the Pyramids to Nubia. In the desert, near Lake Fyoom, it is tolerably abundant.

122. ALAUDA CRISTATA, L. Crested Lark.

This I consider the most abundant bird in Egypt. In Nubia the specimens appeared rather paler than those in Egypt. I insert this remark, which I made at the time in my notes, as I also observed that the Desert Larks were darker in Nubia than in

Egypt, not then being aware that they had already been separated into two different species.

123. Calandrella brachydactyla, Leisler. Short-toed Lark.

Arrives in Egypt in March; and as I did not met with it later than the middle of April (always in flocks) I think it probably does not remain to breed.

124. Calandrella reboudia, Tristr. Desert short-toed Lark.

I never met with this bird to my knowledge. It is a small desert form of the last species, which remains in Egypt throughout the year. Mr. E. C. Taylor killed some specimens in the month of January, near Cairo, out of a small flock that he found in the desert.

125. Ammomanes isabellina (Temm.). Desert Lark.

Resident throughout the year in Egypt, and very abundaut, keeping exclusively to the desert or its confines, where it may be frequently seen, generally in pairs, running along the sand, with which its colouring so well conforms, or perched upon a stone by the side of a rock. No spot either on the plain or on the mountain seems too drear and desolate for its abode. In Nubia it is almost entirely replaced by the next species, a very closely allied form.

126. Ammomanes fraterculus, Tristr. Tristram's Lark.

This is one of the most abundant birds in Nubia and near Assouan.

First described by the Rev. H. B. Tristram (P. Z. S. 1864, p. 434).

127. Emberiza hortulana, L. Ortolan Bunting.

During my first visit to Egypt in 1868, I shot this bird on several occasions between Cairo and Benisouéf in the early part of April. It only arrives in Egypt in March, and, I believe, is never very plentiful.

128. Emberiza cæsia, Cretzsch. Cretzschmar's Bunting.

The Rev. A. C. Smith ('Attractions of the Nile,' vol. ii. p. 232) mentions having seen this bird at Alexandria. I shot it once near Cairo in the beginning of April, and saw, I believe, a second specimen.

129. Linota cannabina (L.). Linnet.

Very plentiful in the Delta in winter. I have never observed it above Cairo, and believe that it does not remain to breed in the country.

130. Erythrospiza githaginea, Licht. Desert Bullfinch.

This pretty little bird, rendered so conspicuous by its bright red bill, is very plentiful in Upper Egypt and Nubia, where it may generally be met with in pairs along the confines of the desert, or in flocks. It invades the cultivated land for its food, which consists entirely of small seeds. Its flight very closely resembles that of the Linnet.

131. Passer domesticus (L.). Common Sparrow.

Extremely abundant throughout Egypt and Nubia.

132. Passer salicarius, Vieill. Spanish Sparrow.

All those who have written on the ornithology of Egypt, appear to agree that this is an extremely abundant species. Mr. E. C. Taylor (Ibis 1867, p. 65) says that it is more abundant even than *P. domesticus*. I, however, only recognized it in Egypt on one occasion, when I shot three out of a flock at Golosaneh on the 1st of February. I was constantly on the look-out for this species during my last visit, but always unsuccessfully. On both occasions I have not commenced collecting birds before February; and at that season this species may be leaving the country, for it certainly does not breed abundantly in Egypt. Dr. A. L. Adams says (Ibis, 1864, p. 23) that in November and December, during the ripening of the "dhurra," Spanish sparrows assemble in enormous numbers and do great damage to the crops.

133. Corvus umbrinus, Hedenborg. Brown-necked Raven.

This small Raven is very plentiful throughout Egypt and Nubia, wherever the rocks afford it a suitable home.

It builds both in rocks and trees, in the latter instance generally selecting the crown of some lofty Date-palm.

134. Corvus affinis, Rüpp.

I have seen a specimen of this bird in Mr. E. C. Taylor's collection, which was obtained in Upper Egypt.

It is a true Raven; its bill is short, conical, and thick. The feathers on the throat are lanceolate, and a rich violet reflection pervades the whole of its plumage. Length 19 inches; the wing exceeds the tail by 1 inch. The Rev. H. B. Tristram gives an interesting account of this species (Ibis, 1866, p. 71). The Rev. A. C. Smith, in his 'Attractions of the Nile,' vol. ii. p. 276, mentions seeing a pair of small Crows of jet-black plumage at El Kab, which no doubt belonged to this species.

135. Corvus cornix, L. Hooded Crow.

Extremely abundant in Egypt, but less so in Nubia. It breeds in the country towards the end of February.

136. Corvus frugilegus, L. Rook.

I first met with this bird at Memphis in 1868, and subsequently found it in great abundance in the Delta; but it does not remain to breed in the country.

137. Sturnus vulgaris, L. Starling.

I found this bird plentiful throughout the Delta in the month of February, but never saw it elsewhere, although it is to be found in Middle and, possibly, in Upper Egypt.

138. Columba schimperi, Bp. Schimper's Pigeon.

This is the species to which all the Egyptian tame pigeons belong. It differs from *C. livia* in the absence of the white rump, so characteristic of the latter species. It may be seen in great abundance in its purely wild state breeding in the rocks of Aboofáyda, and at Gebel el Thayr.

139. Turtur auritus, G. R. Gray. Common Turtle-dove.

I did not meet with this species until the 20th of April, at Edfoo. It had evidently only just arrived; for I saw it daily afterwards in greater abundance than either of the other two species of Turtle-doves. The bird which has generally been mistaken for *T. auritus*, from Egypt, is *T. sharpii*, which I had the pleasure of naming after my friend Mr. Sharpe, Librarian of the Zoological Society of London.

140. Turtus sharpii, G. E. Shelley.

This bird arrives in the beginning of March and is extremely abundant throughout Egypt and Nubia, where it may be found breeding in great numbers towards the latter end of that month, some three weeks before *T. auritus* arrives in the same country. It has long been confounded with our common Turtle-dove, owing to the similarity of its markings, but may at once be distinguished from that bird by the absence of any blue shading on the head and back, and from other characters which I have given in detail (Ibis, 1870, p. 447). The egg is intermediate in size between those of *T. auritus* and of *T. ægyptiacus*, and, from the one specimen I brought home, appears not to be of such a pure white colour as those of the other two Doves.

141. Turtur ægyptiacus, Lath. Egyptian Turtle-dove.

Very abundant throughout Egypt and Nubia, and is the only Turtle-dove which remains there the whole winter. It builds both in trees and on the ground by the side of banks.

142. Coturnix communis, Bonnaterre. Quail.

Arrives in Egypt in great abundance towards the beginning of March, and leaves again in November. The greater number of birds met with in Egypt are probably only passing through the country.

143. Ammoperdix heyi, Temm. Hey's Sand-partridge.

Rare in Egypt. Mr. E. C. Taylor obtained a specimen at Assouan (Ibis, 1867, p. 67). It frequents rocky districts, where it prefers running and hiding among the stones to taking wing. The Rev. H. B. Tristram gives an account of its habits (Ibis, 1868, p. 214).

144. Pterocles exustus, Temm. Singed Sand-grouse.

I met with this bird in great abundance at Golosaneh, but nowhere else during my last tour. In 1868 I found it very plentiful wherever a certain coarse grass grew, the seeds of which form its chief food, especially at Karnook and near Kom Ombos.

It is generally to be met with in small packs, and is rather shy. It appears to utter its loud shrill note only while on the wing.

It breeds in April, in small holes, which it forms in the sand, and lines scantily with dried grass.

145. Pterocles senegalensis, Latham. Senegal Sand-grouse.

This Sand-grouse, which differs from the last chiefly in its paler colour and yellow throat, is also far less abundant; and we only shot three specimens while in Egypt.

146. Pterocles coronatus, Licht. Crowned Sand-grouse.

This is undoubtedly a rare bird in Egypt; for neither Mr. E. C. Taylor nor myself ever once met with it; but Dr. A. L. Adams mentions having shot four of these birds out of a flock at the second Cataract (Ibis, 1864, p. 27), and Mr. S. S. Allen also shot a pair at El Kab (Ibis, 1864, p. 240). This species is well figured in Gould's 'Birds of Asia.'

147. Glareola pratincola (L.).

This Pratincole arrives in Egypt in great numbers about the middle of April. We first met with it at the first Cataract, near Phile, on the 15th of that month, and afterwards saw it in great abundance as we descended the Nile, sometimes on the bare fields, but more frequently by the side of some pool, or on the numerous sand banks; at times flying rapidly through the air in flocks like Plovers, or else floating with outspread wings, or, again, playing over the water after the manner of Terns. When I first saw a single specimen of this bird rise from a small pool, I should have taken it for a Green Sandpiper, which it very closely resembles in the colouring of its back and flight, had it not been for the greater length of its pinions, which gives it a more Tern-like appearance. Locusts seem to form their chief food when I met with them. Probably the greater number of these flocks do not remain in the country to breed, but pass on into Europe, returning again in October and November on their way south.

148. Cursorius gallicus, Gm. Cream-coloured Courser.

I met with a flock of four of these birds on the 4th of February, opposite Aboofáyda. Although shy, they preferred running to flying, never remaining long on the wing; and after an hour's hot pursuit I obtained three of them.

149. Otis houbara, Gm. Ruffed Bustard.

This bird, which is abundant in most parts of North Africa, and extends into Arabia, must naturally be found in Egypt. There is a stuffed specimen in the British Museum labelled "Egypt." Mr. Josceline Amherst tells me that he heard it was not uncommon in the desert near El Fyoom.

150. Œdicnemus crepitans, Temm. Thick-knee.

Tolerably abundant in pairs and small flocks throughout Egypt and Nubia. I often shot them, in hopes of obtaining *Œ. senegalensis*, a very nearly allied form which I had expected to find in Egypt.

151. Hoplopterus spinosus (L.). Spur-winged Plover.

One of the most abundant birds in Egypt, where it may be seen on every sand bank, either motionless, with head depressed and shoulders up, trying to elude observation, or else standing erect and constantly moving its body with a little spasmodic jerk. Its cry is loud and varied, and constantly to be heard. It commences breeding in March, when I have found as many as thirty nests close together towards the point of a sand bank. The birds scrape out neat circular shallow holes in the sand, which they roughly line with short pieces of dried reed, just sufficient to prevent the eggs from touching the ground. In Nubia this bird was comparatively rare.

152. Vanellus cristatus, Meyer. Lapwing.

By no means uncommon; but I have never met with it later than March in Upper Egypt, and I think that it probably does not breed further south than the Delta.

153. Chætusia gregaria (Pallas). Social Plover.

Rare in Egypt. I only met with it twice, on the 9th and 10th of March, between Girgeh and Sioot. We killed one of a pair that we saw the first day, and one out of a flock of eight on the second occasion.

154. Chætusia leucura (Licht.). White-tailed Plover.

This Plover was formerly considered one of the greatest ornithological prizes to be obtained in Egypt, and the lake near Erment, where it is yearly to be met with, was given as its only known locality.

The Rev. A. C. Smith, in his book entitled 'The Attractions of the Nile,' mentions having shot it in Nubia. Latterly it has been found to be plentiful in the Delta, where I met with it myself about the middle of February, near Damietta, in pairs and flocks, and have no doubt that it breeds there. It was by no means shy, and showed a predilection for certain spots, to which, when driven away, it would generally soon return.

A specimen of this bird, killed at Malta, has been figured and described by Mr. C. A. Wright (Ibis, 1865, p. 459).

155. PLUVIANUS ÆGYPTIUS (L.). Black-headed Plover.

This species is most abundant in Upper Egypt, from Sioot to Thebes, almost invariably in pairs; yet I doubt if it breeds before May. Birds of this species are never met with far from the river-bank, and when on the wing invariably fly close over the surface of the water, frequently uttering their cry during flight. They look extremely handsome as they thus skim along the stream with outspread pinions, and display their distinctly marked plumage to the greatest advantage.

156. CHARADRIUS PLUVIALIS, L. Golden Plover.

Abundant at times in some parts of the Delta. Towards the end of February we killed several near Damietta.

157. ÆGIALITES GEOFFROYI (Wagler). Large Sand-Plover.

Obtained by Mr. Cavendish Taylor in the market at Alexandria.

A bird of this description would certainly not be brought from far to the Alexandrian market, so that this specimen may safely be regarded as Egyptian, having probably been shot in the immediate neighbourhood of the town. I know of no other specimen having been obtained in Egypt.

It has been well figured and described by Mr. J. E. Harting (Ibis, 1870, p. 378).

158. ÆGIALITES CANTIANUS (Lath.). Kentish Plover.

Very abundant throughout Egypt, and also to be met with in Nubia.

159. ÆGIALITES MINOR (Meyer). Little Ringed Plover.

Abundant throughout Egypt and Nubia.

160. ÆGIALITES PECUARIUS (Temm.).

In 1868 I met with this species in great abundance, especially at Golosaneh and Girgeh. On my second visit, although always on the look-out for it, I only shot one at Golosaneh, on the 8th of May. I generally met with it in similar localities to those frequented by *Æ. cantianus* and *Æ. minor*. On the wing it is often hard to distinguish from the latter.

Temminck has probably figured this bird under the name *C. pecuarius*, Pl. Col. 183, from a specimen which he mentions as having been procured at the Cape of Good Hope; but the figure is by no means good.

[To be continued.]

XI.—*Additional Notes on Birds of the Territory of the Trans-Vaal Republic*. By THOMAS AYRES. (Communicated by JOHN HENRY GURNEY.)

[THE following notes by Mr. Ayres refer to various species of birds observed by him in the Trans-Vaal territory, which were not included in his first list, published in 'The Ibis' for 1869, p. 286, and which, except where the contrary is mentioned, have been identified by the examination of specimens sent by Mr. Ayres to this country.

At the end of this series of notes, some additional remarks are added relating to a few of the species included in Mr. Ayres's previous paper.

Those of the species referred to by Mr. Ayres which are included by Mr. Layard in his work on the Birds of South Africa are distinguished by the addition of the number appended to them in Mr. Layard's book, preceded by the letter L.—J. H. G.]

67. CIRCUS ÆRUGINOSUS (Linn.). Marsh Harrier.

The present bird (a male) was shot by myself in December, 1869, whilst it was hunting in a marsh after the manner of *C. ranivorus*; its flight was slow and heavy. I have never seen one before or since, so that it must be decidedly scarce in the neighbourhood of Potchefstroom.

[This is the only specimen of *C. æruginosus* which I have seen from any locality south of the equator; the specimen sent appears to be a bird of the year.—J. H. G.]

68. (L. 51.) CIRCUS RANIVORUS (Daud.). Le Vaillant's Harrier.

The nestling sent was brought to me in January and was stated to have been taken in the swamp near Potchefstroom.

[See also 'The Ibis' for 1868, p. 464, J. H. G.]

69. (L. 49.) CIRCUS SWAINSONI, Smith. Swainson's Harrier.

Female.—Total length $19\frac{1}{2}$ inches, bill $1\frac{5}{16}$, tarsus $3\frac{1}{4}$, wing $13\frac{3}{4}$, tail $9\frac{1}{4}$.

Iris dark hazel, tarsi and feet yellow, cere greenish yellow, bill horny-black, gape dull green.

This specimen was shot by my brother in February. These Harriers are only here during the summer months, and then not plentifully; they skim quietly about amongst the trees and houses of Potchefstroom, and catch up any unwary chicken or bird that falls in their way. In the same quiet, noiseless way they frequent the reedy streams of the country.

70. (L. 64.) PHASMOPTYNX CAPENSIS (Smith). African Short-eared Owl.

This Owl occurs in the swamps near Potchefstroom, where I have occasionally come across its nest, whilst beating for Snipes amongst the long grass and rushes. The nest is merely a small cavity in the ground, snugly situated under a clump of grass or rushes, and with a few blades of dry rushes at the bottom.

The bird flies from its nest in a great hurry at the near approach of danger. The eggs are two or three in number, pure white and slightly glossy, size about $1\frac{5}{8}$–$1\frac{3}{8}$ inches.

I found a male bird sitting upon a nest, which contained three eggs a good deal incubated; this was in the month of April.

71. (L. 57.) HUHUA VERREAUXI (Bon.). Verreaux's Owl.

Female.—Length 26 inches; bill pale-ash colour.

I found this fine Owl sparsely scattered along the banks of the Limpopo during a recent journey through that district. About sunrise individuals may be heard making a low hooting "goo, goo," repeated at intervals.

The stomach of the specimen sent contained the remains of a Guinea-fowl (*Numida coronata*, Gray), a species which is exceedingly plentiful all along the Limpopo, and roosts at night on the trees by the side of the river.

72. (L. 61.) Scops leucotis (Temm.). White-faced Scops Owl.

I met with only one of these Owls during my trip to the Limpopo, which was brought to me by a Caffre in a starving state; it was a female, and measured in entire length 10¼ inches, the wing 7½, tail 4, and tarsus 1¾. Another specimen was shot by my brother in the month of August, amongst some willows at Pochtefstroom.

73. (L. 56.) Athene perlata (Vieill.). Pearl-spotted Owlet.

Male.—Length 7¼ inches, wing 4, tail 2¾, tarsus $1\frac{1}{16}$; iris yellow.

This little Owl is tolerably common along most of the rivers in the Bush, and especially on the banks of the Lipopo; it often occurs in pairs; it is partly diurnal, and whistles loudly, more frequently by day or on moonlight nights; when the Jackals begin to cry, it almost invariably utters its short song, which somewhat resembles that of the Golden Cuckoo, *Chrysococcyx auratus* (Gmel.). Its notes run thus, or nearly so, do, re, mi, fa, sol, sol, sol, sol.

The grasp of this Owl is extremely powerful, considering its small size. One that I wounded made its claws meet through the tip of my finger. In most of the specimens sent I found the remains of mice.

[I cannot find any sufficient ground of specific distinction between southern specimens of this Owl, to which Lichtenstein assigned the name of "*licua*," and more northern examples, on which Vieillot founded his "*Strix perlata*." See also Dr. O. Finsch's recent remarks on this point in the Trans. of the Zool. Soc. vol. vii. p. 209.—J. H. G.]

74. (L. 66.) SCELOSTRIX CAPENSIS (Smith). South-African Grass Owl.

These Owls inhabit the long rushes in the swamps surrounding Potchefstroom, but are not plentiful; their flight is noiseless.

75. (L. 115.) MELITTOPHAGUS PUSILLUS (Müll.). Rufous-winged Bee-eater.

This species is pretty common along the Limpopo, generally in pairs, but sometimes in small companies.

76. (L. 116.) MELITTOPHAGUS BULLOCKOIDES (Smith). White-fronted Bee-eater.

These Bee-eaters I have found in flights on the banks of rivers, generally alighting on the tops of bushes and trees, or on any bare exposed twig; their notes are harsh and short.

77. (126.) CINNYRIS BIFASCIATA (Shaw). Bifasciated Sun-bird.

Total length $5\frac{1}{2}$ inches, bill 1, tarsus $\frac{13}{16}$, wing $2\frac{3}{4}$, tail 2.

This lovely little bird I first shot at some distance from the river Limpopo, during the month of July. I found several feeding amongst some Aloes, but they were very shy and difficult to obtain. Flowers being at that season exceedingly scarce, they frequently hunted for small insects amongst the dry seed-tops of the high grass, hovering round the stem as a Humming-bird would do, and thus remaining stationary, but darting away immediately on my approach, so that I found it difficult to get within forty or fifty yards of them.

78. (L. 127.) NECTARINIA FAMOSA (Linn.). Malachite Sun-bird.

These Sun-birds are exceedingly scarce about Potchefstroom; but a few of them frequent the neighbouring hills and open country.

79. (L. 154.) DRYMŒCA AFFINIS, Smith. Allied Drymœca.

This species frequents weeds, high grass, and low bush, and is generally distributed over the country.

80. (L. 158.) Drymœca chiniana, Smith. Kurichane Drymœca.

Total length 6 inches; iris light brown.

This species is common in many localities on the Limpopo.

[Mr. Ayres, in addition to the normal specimens of this *Drymœca* which he collected, forwarded an example of a pale variety, respecting which he says:—"The only one I have seen; it flew actively from tree to tree, and I had some difficulty in getting a shot at it; the stomach contained small insects."—J. H. G.]

81. (L. 150.) Drymœca ocularia, Smith. Rufous-cheeked Drymœca.

Male.—Total length $5\frac{3}{4}$ inches, bill $\frac{17}{32}$, wing $1\frac{7}{8}$, tail $2\frac{7}{8}$; iris hazel, bill black, tarsi and feet dusky pale.

Female.—Total length $5\frac{3}{8}$, tarsus $\frac{13}{16}$, tail $2\frac{5}{8}$, bill and wings as in male.

There is very little difference in plumage between the sexes; but the rufous patch on the cheeks is much lighter in the female than in the male.

I first met with this species amongst the low bushes on the banks of the Vaal River, and between that and the Hartz River, where they were pretty plentiful, hopping briskly about amongst the thickets, with the active habits common to most birds of this genus.

82. (L. 156.) Drymœca ruficapilla, Smith. Rufous-headed Drymœca.

Total length $4\frac{1}{2}$ inches; tarsi and feet pale; iris light brown.

The heel in this bird bends curiously forward with the front toe, as if out of joint, or double-jointed.

This species inhabits low scrub.

83. (L. 159.) Cisticola terrestris (Smith). Ground Cisticole.

Total length $4\frac{3}{4}$ inches; iris light brown.

These little birds live among the long grass, and appear to move most in the evening, about sunset, lying quiet in the heat of the day; they are generally to be seen three or four together.

[This species is a typical *Cisticola*, the tail consisting of twelve rectrices; and it seems very closely allied to *Cisticola cursitans* of Asia, and *C. schœnicola* of Southern Europe and Northern Africa, as well as to *C. ayresi* of Natal, if, indeed, these be all really distinct species, on which subject the article of Drs. Finsch and Hartlaub in their work on the Birds of East Africa, under the head of *Cisticola cursitans*, p. 229, may be advantageously consulted. The following measurements of *Cisticolæ*, giving the length of the tarsus and of the wing from the carpal joint to the tip, will show how slight is the variation in size between these closely allied races.

			Wing. inches.	Tarsus. inch.
Cisticola	*terrestris,*	Damara Land . .	2	$\frac{14}{16}$
”	”	Trans-Vaal . . .	$1\frac{13}{16}$	$\frac{13}{16}$
”	*cursitans,*	India	2	$\frac{13}{16}$
”	”	Syria	$2\frac{1}{16}$	$\frac{13}{16}$
”	”	Constantinople .	$2\frac{1}{16}$	$\frac{13}{16}$
”	*schœnicola,*	Italy	$1\frac{13}{16}$	$\frac{12}{16}$
”	”	Egypt	$1\frac{13}{16}$	$\frac{11}{16}$
”	*ayresi,*	Natal	$1\frac{12}{16}$	$\frac{11}{16}$

J. H. G.]

84. (L. 148.) AEDON FASCIOLATA (Smith). Fasciolated Aedon.

Total length $5\frac{1}{4}$ inches in the male, $4\frac{3}{4}$ in the female; iris dark.

These birds feed upon small insects. They inhabit low bush and scrub; when disturbed they invariably fly and settle close to or on the stems of the bushes, and then work their way up. They appear to be solitary in their habits. In the living bird the speckled wings are more conspicuous than the barred breast.

[Sir A. Smith, who first described and figured this species and its near congener, *A. subcinnamomea*, in his 'Illustrations of the Zoology of South Africa' (*Aves*, pl. 111), refers both to the genus *Drymœca*, but says of the latter that "it is to be viewed as an aberrant form" of that genus. I am much disposed to think that these two species should be formed into a separate genus by themselves; but as the multiplication of genera ought, where possible, to be avoided, I refer them to the genus *Aedon*, to which, as it seems to me, they are more nearly allied than to *Drymœca*.—J. H. G.]

85. (L. 182.) AEDON LEUCOPHRYS (Vieill.). White-browed Aedon.

Total length $6\frac{1}{4}$ inches; tarsi and feet pale, iris dusky.

These birds inhabit the bush, but appear to be rather scarce. Their food consists of insects; and I noticed one feeding on the ground. In habits they appear much to resemble the Warblers.

86. (L. 181.) AEDON PÆNA (Smith). Smith's Aedon.

Total length $6\frac{1}{4}$ inches; iris dusky, bill black.

These also are by no means plentiful; and the two I obtained were very shy and difficult to approach. Their stomachs contained insects. This species is found amongst thorn-trees, and high grass, and when in motion constantly jerks the tail, showing to advantage the broad white tips of the feathers.

87. (L. 171.) EREMOMELA FLAVIVENTRIS (Burch.). Yellow-bellied Bush-chirper.

Female.—Total length 4 inches, bill $\frac{8}{16}$, tarsus $\frac{12}{16}$, wing $2\frac{2}{16}$, tail $1\frac{1}{2}$.

In appearance and habits this species resembles *Zosterops virens*.

88. EREMOMELA USTICOLLIS, Sundev. Brown-throated Bush-chirper.

Male, total length $4\frac{3}{8}$ inches, bill $\frac{9}{16}$, tarsus $\frac{15}{16}$, wing $2\frac{4}{16}$, tail $1\frac{12}{16}$; female slightly smaller; iris light tawny in male, nearly white in female; tarsi yellow.

This species also much resembles a *Zosterops* in its habits. It sings sweetly, but not loudly; and when in a tree only a few feet overhead, its voice sounds as though it came from a distance. Its food consists of insects, for which it may generally be found searching actively amongst the upper branches and leaves of trees and bushes.

89. (L. 187.) BRADYPTERUS SYLVATICUS, Sundev. Pavaneur Reed-Warbler.

This species is common amongst the high grass and rushes of the swamps of the Trans-Vaal.

[I agree with the view expressed by Mr. Layard (Ibis, 1869, p. 366) to the effect that this species is probably identical with "Le Pavaneur" of Le Vaillant.—J. H. G.]*

90. (L. 210.) PARUS CINERASCENS, Vieill. Grisette Tit.

Male.—Total length $5\frac{3}{4}$ inches; iris dark hazel, bill black, tarsi and feet dark ash-colour.

These birds are sparsely scattered along the rivers, frequenting scrub and low bush, feeding upon insects, and creeping about the roots and low branches in search of their food; their flight is not prolonged, and their notes are harsh.

91. (L. 212.) PAROIDES CAPENSIS (Gmel.). Cape Becquefleur.

Total length $3\frac{5}{8}$ inches; bill black.

I shot this bird on the borders of the Limpopo, amongst the bush. Its stomach contained insects; its habits resemble those of the smaller Warblers.

92. (L. 213.) PARISOMA SUBCÆRULEUM (Vieill.). Rufous-vented Grignet.

Male.—Total length 6 inches; iris light tawny; bill, tarsi, and feet black.

I first found this bird in the Mariqua district, and afterwards along the Limpopo; it creeps about the low bushes, and amongst the grass at the roots of trees, in search of insects.

93. BUDYTES FLAVA (Linn.). Grey-headed Yellow Wagtail.

Total length $7\frac{1}{16}$ inches; iris, bill, tarsi and feet dusky.

This Wagtail appears here in our spring in considerable numbers, and leaves again about the latter end of April; they do not appear to nest here, neither are they in good plumage; the best-plumaged birds are to be got just as they are leaving. During their stay here they are common on our market-square early every morning, where they find abundant food amongst the short grass, and the cow-dung, which attracts many insects, on which they are often to be seen feeding in company with *Motacilla capensis.*

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* [*Cf.* Sharpe, Cat. Afr. Birds, p. 33, where *B. sylvaticus* is treated as a synonym of *B. brachypterus* (*Calamodyta brachyptera*, Vieill.).—ED.]

[Out of seven specimens sent by Mr. Ayres, only one showed the fully developed bluish-grey cap peculiar to the male in breeding-plumage.—J. H. G.]

94. Budytes melanocephala (Licht.). Black-headed Yellow Wagtail.

[A male with a fully developed black head was sent by Mr. Ayres with the seven specimens of *B. flava.* In common with many other naturalists, he does not appear to consider this form specifically distinct.—J. H. G.]

95. (L. 221.) Motacilla aguimp, Temm. Widow Wagtail.

This Wagtail is not nearly so plentiful as *M. capensis*; it is almost always found in pairs, usually near rivers, and often where cattle have been lying during the night, where it catches the insects that are attracted by the cow-dung.

It is generally distributed, but rather more plentifully along the Vaal River than elsewhere.

96. (L. 192.) Saxicola infuscata, Smith. Fuscous Wheatear.

Total length 7⅞ inches, bill 1, tarsus 1¼, wings 4¼, tail 4¼; iris dusky; bill, tarsi and feet black.

I saw two specimens near the Vaal River, one of which I killed; its stomach contained a single Locust, which it had swallowed nearly whole; it had all the appearance of a Flycatcher, as it sat upon the upper twigs of a low bush, and somewhat of the Flycatcher's wavering flight when it left the bush and settled on the ground close by, apparently in search of some insect.

97. (L.200.) Saxicola sinuata, Sundev. Sundevall's Wheatear.

Female.—Iris dusky; bill, tarsi, and feet black.

I shot this Chat on the open plains, some thirty miles from Potchefstroom. It was on stony ground; and I put it up twice or thrice, when it invariably settled on some small stone. The stomach contained insects.

98. (L. 249.) **Bessonornis humeralis** (Smith). White-shouldered Chat-Thrush.

Male.—Iris dusky; bill black.

I shot this scarce bird amongst the thick scrub on the banks of the Limpopo; the stomach contained insects; it was lively and restless in its actions.

99. (L. 230.) **Anthus caffer**, Sundev. Caffer Pipit.

This Pipit places its nest on the ground in some snug well-sheltered nook, or at the foot of a tuft of grass. It is cup-shaped and neatly built of dry grass, the outer layers coarse, the next fine, and lined with hair from the tails of cattle. The eggs are four in number.

100. (L. 228.) **Anthus pyrrhonotus**, Vieill. Cinnamon Pipit.

Male.—Total length 8 inches; iris dusky, tarsi and feet dusky pale.

This Pipit is distributed during the winter months over the whole country, but more plentifully on high bare lands than in the bush or along the Limpopo. It feeds on insects, has a low dipping flight, and occasionally alights on low trees.

[I am indebted to the kindness of Mr. E. L. Layard for pointing out to me the oldest of the many specific names which have been applied to this Pipit; this name was founded on Le Vaillant's plate, No. 197, which I agree with Mr. Layard in referring to this species. The remainder of the synonymy of this Pipit has been recently published in detail by Mr. R. B. Sharpe, in the very useful Catalogue of the African birds now in his collection, No. 693.—J. H. G.]

101. (L. 229.) **Anthus raaltenii**, Temm. Raalten's Pipit.

This species resembles the preceding in its low dipping flight.

102. (L. 204.) **Bradornis mariquensis**, Smith. Mariqua Flycatcher.

I noticed two of these Flycatchers on my journey to the Limpopo, and two others near the junction of that river with the

Mariqua; they appeared to have much the habits of the common English Flycatcher.

103. (L. 312.) NILAUS BRUBRU (Lath.). Brubru Shrike.

This species is tolerably common on the Limpopo.

104. (L. 252.) CRATEROPUS BICOLOR, Jardine. Southern Black and White Babbler.

I obtained this species near the river Limpopo.

105. (L. 347.) BUPHAGA AFRICANA, Linn. Greater Ox-pecker.

Is not this bird rightly named *Buphaga*? During our stay in the bush Ox-peckers appeared in numbers about our oxen, and actually ate large holes in the fleshy part of their backs, often one or two inches deep, and two or three inches in diameter, thus creating bad sores. They do this little by little, and day by day; and though it is annoying to the ox, I cannot say that it seems to feel it much. The birds attack just that part of the back where the ox cannot swish them off with its tail or dislodge them with its horns. They especially infest those oxen which have lost their tails by inoculation for the lung-disease. I had previously thought that these birds only ate the parasitical insects common to cattle and game.

This species is not found about Potchefstroom, but is exceedingly common from the Mariqua all along the Limpopo; it is a pest to the hunter, of whose approach it warns the Buffalo and Rhinoceros by its loud harsh note, which is perfectly understood by its huge friends.

I have not seen any holes picked by these birds in the Buffalo or other game, but only in cattle.

106. (L. 331.) CORVUS SCAPULATUS, Daud. Scapulary Crow.

This is a scarce bird here. Its eggs are pale green with small dusky spots; those sent were taken from a nest placed in a thorn-tree in a range of hills about twenty miles from Potchefstroom.

[To be continued.]

XII.—*Observations on* Dr. Stoliczka's *"Contributions to Malayan Ornithology"*[*]. By Arthur, Viscount Walden, P.Z.S.

By the publication of the paper the title of which is given above, Dr. Stoliczka has materially increased our knowledge of the ornithology of a region hitherto but little known. The small British possession of Province Wellesley appears never to have been before explored by the ornithologist, unless some portion of the so-called Pinang collections, which occasionally come to Europe, are made on the mainland. From this district Dr. Stoliczka enumerates about eighty-six species, chiefly belonging to the *Picariæ* and *Passeres*. And it is perhaps the principal merit of these "contributions" that while they enable us, for the first time, to fix the northern limits of some, they extend our acquaintance with the range of many Malaccan species. Thanks to Dr. Stoliczka, our knowledge of the *habitat* of many Malayan species can no longer be summed up in the unsatisfactory and stereotyped words "Malacca," or "Singapore." In most instances copious notes are added, generally consisting of elaborate descriptions, objections to the validity of certain species, and rectifications in accordance with the author's views of the synonymy of others.

Province Wellesley is a narrow strip of land which runs for about thirty-five miles along the western coast of the Malay peninsula, opposite to Pinang. It does not appear to extend more than four miles inland; and as it occupies so small a part of the breadth of the Malayan peninsula, we must not be too sure that its birds do more than approximately indicate the character of the ornis within the same degrees of latitude. It is quite possible that Malaccan peninsular forms which appear to cease in the Province, may, further inland, have a more northern limit, or that Indo-Burmese species may descend further south. Yet in the province itself a change in the character of the avifauna does occur, and many Malaccan species there cease, and Indo-Burmese there begin to appear. And, whether it be a mere coincidence or something more, the parallel of latitude at which the island of Sumatra terminates in the north intersects the Malayan peninsula at the point where the peninsular ornis commences to lose its Sumatran character.

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[*] J. A. S. Bengal, vol. xxxix. pt. ii.

The synonymy of the Indo-Malayan avifauna remains still, to a great extent, in a backward and unsettled condition. The difficulty of obtaining specimens from the different principal areas of the subregions wherewith to make comparisons is one great reason; for it is useless to attempt to decide from descriptions alone the identity or non-identity of many of the species described by the older authors; and the ornithology of the Indo-Malayan countries having attracted the attention of writers from the earliest period, its literature is very considerable. We must not, therefore, be surprised at finding some corrections needed in Dr. Stoliczka's interesting paper, and that his conclusions, here and there, require some modification. Having for many years devoted much time to the study of Malayan ornithology, and having had considerable opportunities of consulting both books and specimens, I propose to make a few remarks on some of the more important observations and statements of the learned Doctor.

The suggestive introduction to the "Contributions," however, contains some sweeping generalizations, which first deserve special notice. We are told that more than one-half the species inhabiting Sumatra, Java, the greater part of Borneo, the Malayan peninsula, from Singapore to province Wellesley, and including the island of Pinang, are absolutely the same. Upon what data is this assertion based? In the absence of any authentic and exhaustive lists of the species inhabiting these several regions, it is not in our power to deny its accuracy; but, until such lists have been prepared and analyzed, it remains equally beyond our power to affirm its truth. The facts I have been enabled to collect, insufficient, I admit, to be deemed conclusive, tend to prove that nearly all the birds of the Malaccan peninsula are identical with those of the island of Sumatra, but that Sumatra over and above possesses species that do not occur in the peninsula of Malacca, that Java contains a large number of species which differ from those of Malacca and Sumatra, and that Borneo possesses species some of which are

Javan and others Malaccan in their identities. I exclude, of course, the *Accipitres, Grallæ,* and *Anseres* from the comparison.

"Several of the birds noted from the Wellesley province represent intermediate types between the northern Indo-Burmese and the southern Malayan forms." A careful perusal of Dr. Stoliczka's paper has not enabled me to find one positive fact to support this statement. Not a single indisputable instance is given of a Province-Wellesley individual presenting characters distinguishing it from a Malaccan individual on the one side, and from an Indo-Burmese on the other.

Dr. Stoliczka is energetic in his denunciation of the practice of giving specific titles to forms from different areas, such as India, Burma, the Malay peninsula, and Java, which differ only in a certain degree from one another. The learned Doctor does not define the amount of difference necessary to constitute a species, but continues—"Such artificial specific distinctions may look very well in a catalogue of birds, or on the labels in a museum, when perhaps one or two specimens from distant localities are considered to indicate an unusual richness of the collection; but they are far from sufficient to illustrate the fauna of a province, and those so-called species have often no existence in nature." Let us admit, though only for the sake of argument, that naturalists when endeavouring to bring together examples of nearly allied forms from widely separated areas, are not actuated by higher motives than those here suggested; still do they not do more to illustrate the fauna of a district than if they ignored the facts thus acquired? Do not many of these facts raise some of the most perplexing questions in natural history?—notably the question what is and what is not a species? If ornithologists are open to the imputation contained in the passage quoted, how is it that all the inhabitants of one distant region, and not merely a trifling percentage, are not described under distinct titles, in order that they "may *look well* in a catalogue of birds or on the labels in a museum"? My experience of the motives which guide ornithologists when investigating, discriminating, and recording the differences existing between forms inhabiting distinct areas certainly prevents me from agreeing with Dr. Stoliczka's remarks on this subject.

1. Hierax fringillarius (Drap.).

There is much to be said in favour of Dr. Stoliczka's view that *H. eutolmus,* Hodgs. = *Falco cærulescens,* Linn. Edwards's description agrees better with *H. eutolmus* than with the Malaccan form; but he says nothing about the white nuchal patch, nor does he figure it. Mr. Blyth unites Javan and Malaccan individuals under one species. A recomparison may show that they differ; and certainly Malaccan individuals do not well agree with Horsfield's plate. Sumatran and Malaccan examples in my collection are undistinguishable. I have received *H. eutolmus* from Tongoo.

2. Loriculus galgulus (Linn.).

As the top of the head of *L. vernalis* is not red, Dr. Stoliczka probably alludes to *L. indicus* (Gm.).

5. Harpactes kasumba (Raffles).

The description of the individual noted as a doubtful female of *H. kasumba* agrees well, and only, with the female of that species. It is certainly not the female of the Ceylon and Malabar *H. fasciatus* (Forst.). The bars on the wing-coverts of *H. kasumba,* ♀, are broader than in the male. In *H. fasciatus* there is no difference between the form and proportions of the sexes; their colour alone distinguishes them. Labuan examples of *H. kasumba* do not differ from Malaccan.

Four species of *Harpactes,* as surmised by Mr. Wallace, exist in the Malaccan peninsula:—1. *H. kasumba* (Raffl.); 2. *H. diardi* (Temm.); 3. *H. duvaucelii* (Temm.); 4. *H. rutilus* (Vieill. *ap.* Gould). This last is assuredly a species distinct from *H. duvaucelii,* as Mr. Gould was the first to point out. I possess examples of both species from Malacca.

Dr. Cabanis (Mus. Hein. iv. p. 154) refers *Trogon duvaucelii,* Temm., to *T. rutilus* Vieill., and regards it as an insular species. *H. rutilus,* Vieill. *ap.* Gould, with a uniform cinnamon-coloured upper plumage, Dr. Cabanis (*tom. cit.* p. 156) describes as a new species, from Malacca, under the title of *Pyrotrogon orrhophæus,* and considers it to be the continental representative of the Sumatran *T. duvaucelii.* *Le couroucou cannelle mâle,* of Le Vaillant, on which both *T. rutilus,* Vieill., and *T. cinnamomeus,* Temm., were founded, is described by Le Vaillant (Hist. Nat. Couroucous, p. 20) as having the back, scapularies, *rump*, and *upper tail-coverts* of a lively rufous or pure cinnamon-colour. It cannot, therefore, have been described from an example of *T. duvaucelii*, Temm. Mr. Gould's identification appears to be quite in accordance with the facts; and the title of *orrhophæus*, Cab., will have to be suppressed.

The Sumatran *H. mackloti*, Müll., may yet be discovered in the Malayan peninsula, while the occurrence of a species closely allied to the Javan *H. orescius* (Temm.) in Tenasserim is of the highest interest.

10. PHŒNICOPHAES CURVIROSTRIS (Shaw).

It has been satisfactorily demonstrated by Dr. Cabanis (Mus. Hein. iv. p. 67) that this title applies to the Javan Malkoha only. The Malaccan, Sumatran, and Bornean form, with round nostrils and red lower mandible, must take the name *Ph. erythrognathus*, Hartl. (Verz. Brem. Samml. p. 95, 1844), founded on the Sumatran Malkoha *Cuculus melanognathus*, Horsf. *ap*. Raffles, *nec* Horsf. Dr. Stoliczka states the middle pair of rectrices are sometimes wholly green—an important fact, and which will probably invalidate the right of *Ph. æneicaudus*, Verr., to separate specific rank. A Labuan example in my possession has the middle pair also entirely green.

18. XANTHOLÆMA INDICA (Lath.).

If *Bucco philippensis*, Brisson, is really identical with the Indian little Barbet (*B. indicus*, Lath.), this species must take Statius Müller's name *hæmacephala*, founded by him on Buffon's *Barbue des Philippines* (Pl. Enl. 331*), which came from the Philippines (probably Brisson's type, brought by Poivre), as stated by Buffon (Hist. Nat. vii. p. 102) and also by S. Müller. In Messrs. Marshalls' Monograph of the *Capitonidæ*, it is erroneously stated that Müller's *hæmacephala* was founded on examples from Sumatra; whereas Müller distinctly says, "Er wohnet in

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[*] Given in the Monograph of the *Capitonidæ* as no. 871, which represents *M. virens* (Bodd.). It is to be hoped that the slips in synonymy, and the omission of many important references, which somewhat detract from the scientific value of this otherwise beautiful work, will be repaired in an appendix.

den Philippinischen Inseln, Buffon." So far as we know, none of Müller's titles were founded on specimens. They were mostly given, like Boddaert's, Scopoli's, and Gmelin's, to plates or descriptions in other works.

19. MEGALORHYNCHUS HAYI (Gray).

Lesson's generic title, *Caloramphus,* supersedes that of Eyton, having been published one month earlier (Rev. Zool. 1839, May 1st). Dr. Stoliczka has correctly retained the specific name *hayi,* J. E. Gray, for the Malaccan bird. Most unaccountably, in the Monograph of the *Capitonidæ,* Gmelin's title *lathami,* erroneously applied by Raffles (Trans. Linn. Soc. xiii. p. 284) to the Sumatran *Caloramphus,* is adopted, and, moreover, as if it were an original title of Sir Stamford's; for the date 1822 is added. Sir Stamford enumerated the species in his List of Sumatran Birds under the title of *Bucco lathami,* Gm. It is almost superfluous to remark that Latham's Buff-faced Barbet (Synop. i. p. 504, pl. 32), on which Gmelin founded his *B. lathami,* cannot possibly refer to *C. hayi.* It is a dark olive-green bird, with the forehead, chin, sides of the head, and round the eyes dull buff colour, yellow in the plate. *Bill beset with bristles at the base.* No plausible identification of Latham's bird has as yet been made.

20. TIGA "RUFA," Raffl.

It is difficult to perfectly understand the meaning Raffles intended to convey in the last member of the sentence, "Tukki besar, or *T. rufa.*" Nor does Vigors in the "Memoir" assist us; for he does not repeat the words—from which it may, however, be inferred that Vigors did not consider that Sir Stamford intended to bestow a new specific name on Horsfield's species. Malherbe quotes the passage "ou Tukki rufa, Raffl.," thus regarding the letter *T.* as the initial of the native name. Tukki is the Sumatran word, as Phatuk seems to be the Javan, for Woodpecker. Perhaps "besar" is the Sumatran for red, and Sir Stamford may have added the words "or *T. rufa*" as a literal translation of the native name. In the case of *Falco dimidiatus,* he wrote "Lang Laut, or Sea Eagle," thus translating the native name into English, and not into Latin. But still the use of the letter *T*, instead of *P*, is unaccounted for. If *T* is a misprint for *P*, why *rufa*? And yet Sir Stamford could not have meant *T* as the initial of "Tiga;" for that word, in a generic sense, was not used until sixteen years later by Kaup. The question, however, is of small importance; for the oldest title for the Javan species appears to be *Picus javanensis*, Ljungh (Act. Stockh. xviii. p. 134, 1797), unless, indeed, the Sumatran and Malaccan *Tiga* differs from the Javan.

22. HEMILOPHUS JAVENSIS (Horsf.).

Swainson's generic name cannot be used having been previously employed (Audinet-Serville, Entom. 1835). *Mulleripicus*, Bp., next in priority, can only be adopted for *P. javensis* and its affines on the assumption that they are congeneric with *P. pulverulentus*, Temm.*, the type of Bonaparte's genus. Dr. Cabanis has separated them under the title of *Thriponax*.

The Burmese species *M. feddeni*, Blanford† (= *Picus crawfurdi*, J. E. Gray?), is easily to be distinguished from *T. hodgsoni* (Jerd.) by having a very broad white mark on the inner webs of the whole of the quills, primary and secondary, the short first primary included. This white mark occupies about half the length of each quill. In *T. hodgsoni*, the white marking is restricted to the inner webs of the primaries at their insertion, and is only to be detected by pushing aside the under carpal coverts. On the inner webs of the secondaries it is more developed, but is not discernible without first removing the white under wing-coverts. The dimensions of the wings and tail of the two species are about equal, but those of the bill of *T. hodgsoni* are much greater. The extent of white on the back of *T. feddeni* is also more considerable. In full-plumaged males of *T. feddeni*, a conspicuous pure white oval spot occupies the tips of the 3rd, 4th, 5th and 6th primaries. In younger males these spots are dirty brown, and indistinct. I have detected similar indications in Javan examples of *T. javensis,* also in the Malaccan form, but not in individuals of *T. hodgsoni.* Full-plumaged male Javan examples of *T. javensis* have the white on the inner webs of the quills limited, as in *T. hodgsoni.* In Malaccan examples the white is more developed, although not nearly so much so as in *T. feddeni.*

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* Both Malherbe and Dr. Cabanis have superseded Temminck's title by that of *gutturalis*, Valenc., *ex* Sumatra. The 66th livraison of the 'Recueil' was published 10th June 1826. The 40th volume of the Dict. des Sc. Nat. was likewise published in 1826; but the month has yet to be determined. Until that is decided, it seems best to retain the title under which the species was first figured, and by which it is best known.

† [Cf. Blyth, J. A. S. B. xxxii. p. 75 (1863).—ED.]

25. CHRYSOPHLEGMA MALACCENSIS (Lath.).

Malherbe's identification of *Picus malaccensis,* Lath., with *P. miniatus,* Forster, seems well founded, and so also his opinion that the individual referred to by Mr. Blyth (J. A. S. B. xiv. p. 192) belongs to another species.

29. MEIGLYPTES MARGINATUS (Reinw.).

Latham's description of his *P. pectoralis* certainly does not agree sufficiently with *P. brunneus,* Eyton, to warrant the conclusion of Mr. Blyth and of Malherbe. Reinwardt's title cannot stand, as it was not published until after Eyton's and Lesson's. The oldest available title, therefore, seems to be *tukki,* Less. (Rev. Zool. 1839, June 1st, p. 167, *ex* Sumatra), which is senior to Eyton's *brunneus* by about three weeks. *P. luridus,* Nitzsch, was published a year later (Pterylogr. p. 137, 1840).

31. HALCYON COROMANDELICUS, Scop.

Must stand as *H. coromanda,* Lath. The variations, both of colour and dimensions, which this species exhibits in the different localities it inhabits have been well shown by Mr. Sharpe in his accurate and conscientious monograph. The Japanese race is larger, and not smaller, than that of India.

32. H. ATRICAPILLUS, Gm.

= *H. pileata,* Bodd., which must stand.

33. H. FUSCUS, Bodd.

Mr. Sharpe finds that individuals from Asia Minor, and from India, Malay peninsula, &c. are absolutely the same, and therefore adopts *H. smyrnensis* (Linn.). This sets the question at rest; for we cannot follow a more reliable author. The individual described by Dr. Stoliczka is clearly a young bird.

35. Dacelo pulchella, Horsf.

Carcineutes is a good genus, characterized by the notch at the gape, and should be adopted for this species and its Bornean ally. The example described seems to be one of a very old bird, but not quite in full plumage. The chestnut collar disappears in very old individuals, and the entire hinder neck is blue.

36. Æthopyga lathami (Jard.).

Since writing my paper on the eastern Sunbirds, I have had the good fortune to acquire from Pinang a large series of the species noticed under this title by Dr. Stoliczka. The correct title for the Malaccan *Æthopyga* cannot be decided until Sumatran examples of *Certhia siparaja*, Raffles, have been compared with it. There is, and has been, little doubt that *Nectarinia lathami*, Jard. was described from a Malaccan individual, or else from an example not differing from the Malaccan species. But Sir Stamford's description of *C. siparaja* will equally well apply to the Malaccan bird, the brown middle pair of rectrices notwithstanding, old feathers not thrown off. Dr. Cabanis is the only author who has maintained that the Malaccan *Æthopyga* is distinct from the Sumatran. His title, *eupogon*, certainly applies to the Malaccan species, and I find, by comparison, that Labuan examples cannot be separated. But Dr. Cabanis does not leave it quite clear that he had compared his *eupogon* with the Sumatran *siparaja*. A Sumatran example, it is true, is enumerated as being contained in the Halberstadt Museum; but the localities given in the Mus. Heineanum are not always trustworthy. As a distinctive character, Dr. Cabanis says, "Bauch dunkelgrau, ebenso die Weichen, welche nicht weiss sind." Was he misled by Temminck's figure of *N. mysticalis*, with which Dr. Cabanis identifies *Æ. siparaja*? Dr. Stoliczka places some reliance on the tail being shorter than the wing in his examples. The two middle rectrices in the Malaccan *Æthopyga* are seemingly shorter in proportion than in *Æ. miles*. Out of six adult Pinang males, I find that the tail in three is shorter than the wing (2 inches). One has the tail an eighth of an inch longer than the wing. Two have the tail equal to the wing. But according to Mr.

Wallace (P. Z. S. 1863, p. 220), it may be inferred that a short tail is a characteristic of true *siparaja*. In the imperfect state of our knowledge of the relationship of the Sumatran and Malaccan *Æthopyga*, it seems to me more prudent to retain the title of the Sumatran species for that of Malacca, until it can be shown by comparisons made between actual examples that they specifically differ. Whether the Javan *N. mysticalis*, Temm., and the Sumatran *C. siparaja*, Raffles, are identical, is much more open to dispute.

38. ARACHNECTHRA FLAMMAXILLARIS (Blyth).

The absence of a maroon pectoral band in *A. jugularis* (Linn.), as I have previously remarked, will probably be found to distinguish the Philippine from Mr. Blyth's species. Should, however, Dr. Stoliczka's surmise prove correct, a new fact in the distribution of the Philippine ornis will be established; for, so far as at present known, there is not a single instance of a Philippine species being found in the Malay peninsula and the remaining area of *A. flammaxillaris*, and yet nowhere else.

39. NECTAROPHILA MALACCENSIS (Scop.).

As I have already stated (Ibis, 1870, p. 48), Javan and Malaccan examples of this species in no way differ.

40. ARACHNOTHERA MODESTA, Eyton.

Dr. Stoliczka observes, "This species is readily distinguished from the last (*N. malaccensis*?) by its stout and short bill." What species is referred to?

49. PITTA GRANATINA, Temm.

This is the correct title for the Malaccan bird, unless the slight differences it exhibits are considered sufficient to separate it from the Bornean type. *P. venusta*, Temm. has not, I believe, been found out of Sumatra.

50. GEOCICHLA MODESTA (Eyton).

This title must give way to *Turdus rufulus*, Drapiez (1826), a bird of passage in Java. There can also be little doubt that it is the *T. pallens*, Pallas*. And if it is the *Pale Thrush* of Latham, *ex* Pennant, with which Pallas identified his *T. pallens*, it will have to stand as *T. pallidus*, Gm. The bird has been well figured in the 'Fauna Japonica,' pl. 27. I am unable to distinguish Malaccan examples from a Lake-Baikal individual. *T. chrysolaus*, Temm. *ap.* Godwin-Austen, J. A. S. B. xxxix. p. 102, no. 358, *ex* Jerd., is a female of *T. pallens*. This individual, obtained at Cherra Punji, exhibits the secondary coverts tipped with white, as shown in the 'Fauna Japonica,' a feature not always present. This species can scarcely be classed under *Geocichla*.

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* *Conf.* Blyth, Ibis, 1870, p. 167.

56. IORA TYPHIA (Linn.).

I. zeylonica (Gm.), was described from a Ceylon bird. Dr. Stoliczka states that "birds with the whole upper black plumage of *zeylonica* are never met with in Burma and the Malayan country." My experience of the species fully confirms this statement. And I may add, that I have never seen a full-plumaged Ceylon male in the garb of a Burmese *I. typhia*. These two birds are additional instances to the many already known where the full plumage in the one species is more or less the female or young garb of another species. It is very likely that *I. zeylonica* and *I. typhia* interbreed at the extreme limits of their respective regions, in the same way as *Coracias indica* and *C. affinis*; but this in no way establishes their specific identity. I cannot find that Mr. Blyth has ever doubted the distinctness of the two species. He has, however, suggested the probability of hybrids occurring.

58. PHYLLORNIS JAVENSIS (Horsf.).

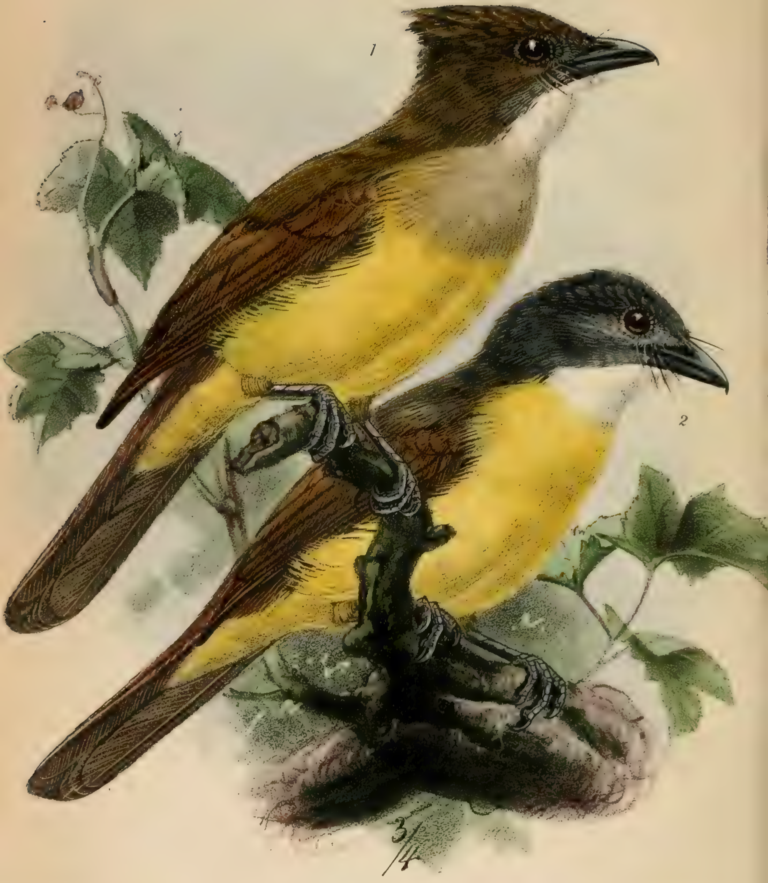
The identity of the Malayan with the Javan species has yet to be established.

59. PHYLLORNIS CYANOPOGON, Temm.

As described, the Province-Wellesley individuals do not agree with Temminck's species, in which there is no yellow whatever. True *P. cyanopogon*, Temm. is sometimes sent from Malacca in collections.

60. PHYLLORNIS COCHINSINENSIS (Lath.).

This is Gmelin's title, bestowed by him on Montbeillard's "Verdin de la Cochinchine" (Hist. Nat. Ois. iii. p. 409). The type was figured in the 'Planches Enluminées,' no. 643. f. 2. Montbeillard affirms that it most certainly came from Cochin



G Keulemans lith
M & N Hanhart imp.

Fig I . CRINIGER GULARIS
- 2 —— PHÆOCEPHALUS

China, because it was contained in the same case with an "animal porte-musc" sent direct from that country. Temminck compared the type specimen in the Paris Museum with examples of a *Phyllornis* said by him to be sent in large numbers from Java and Sumatra, and states that they did not differ from the type. This species of *Phyllornis* Temminck figured (Pl. Col. 484. fig. 2) from a Javan example, and he refers to that Plate as containing the most exact resemblance of the species until then published. Montbeillard's account agrees well with the figure given by Temminck, and with Javan examples in my possession. But the bird remarked on by Dr. Stoliczka is a totally distinct species, namely *Phyllornis malabaricus* (auct. *ap.* Temm. Pl. Col. no. 512. fig. 2) = *Ph. icterocephalus,* Temm. *ap.* Bp. (1850), a title which I presume must stand, although never published by Temminck; for I cannot concur with Horsfield and Moore (Cat. E. I. Co. i. p. 411) in identifying the yellow-headed *Phyllornis* with *Chloropsis mysticalis,* Swains. (1838). Indeed Dr. Stoliczka's statement, that the female has the wings and tail coloured like the male, effectually disposes of any such hypothesis. *Ph. mysticalis* is either the female of *Ph. cyanopogon,* Temm., or else of a species of which the male has not been described. *Phyllornis cochinsinensis* I have not as yet met with from the Malay peninsula.

61. Criniger gularis (Horsf.). (Plate VI. fig. 1.)

This title applies to the Javan species only—a distinct bird with the entire head rufous-brown, and not ashy black. It is also a much larger form, with wings and tail about four inches long. *Lanius bres,* Lesson, Voy. Bélanger, p. 255, is synonymous. The Malaccan species, which I find on comparison is identical with the Sumatran, must stand as *C. phæocephalus* (Hartl.) (Plate VI. f. 2). It has received the following titles:—

Ixos phæocephalus, Hartl. Rev. Zool. 1844, p. 401, *ex* Malacca.

Tricophorus caniceps, Less. *op. cit.* 1845, p. 367, *ex* India.

Pycnonotus rufocaudatus, Eyton, Ann. Mag. N. Hist. xvi. p. 228 (1845), *ex* Malacca.

Criniger cantori, Moore, P. Z. S. 1854, p. 279, *ex* Malacca.

Dr. Hartlaub's name must therefore be adopted.

66. Irena puella (Lath.).

Dr. Stoliczka is of opinion that the three forms of *Irena* which I have lately discriminated (Ann. Nat. Hist. 4th Ser. vol. v. p. 417), "should only be considered as local races of one and the same bird." A perusal of the grounds stated in support of this opinion leads me to the belief that the learned Doctor was not possessed of all the materials necessary to arrive at a sound conclusion. Thus the Javan *I. turcosa* is pronounced to be a local race, although Dr. Stoliczka tells us that he has "not seen Java specimens." Nor does our author in his history of *I. puella* appear to be very well acquainted with all the facts.

Dr. Stoliczka commences with this passage:—"It was, I think, Blyth who first pointed out, years ago, the constant smaller size of the Malayan as compared with the Indian bird; but, on account of the identity in coloration, he considered the two races as belonging to one and the same species, *I. puella*, Latham. There are probably few ornithologists who, after having seen large series of this species, would not follow Blyth in his determination." I will now quote what Mr. Blyth really did say:—"*Irena*, Horsfield. A curious distinction between the Indian and Malayan *I. puella* auctorum has been pointed out by Lord Arthur Hay, to whom we are indebted for the discrimination of numerous other closely allied forms. In the Malayan bird, the under tail-coverts reach to quite the end of the tail; while in *I. indica*, A. Hay, they are never less than an inch and a quarter short of the tail-tip in the males, and generally an inch and a half short in the females. I have verified this observation upon so many examples from both regions, that there can be no doubt of the fact." (J. A. S. B. xv. pp. 308, 309). It will be seen that not one word is said about coloration, or about "the constant smaller size." Nor has the relative size of the three species ever been alluded to by me, beyond my remark in the Annals (*l. c.*), that in all three species the length of the wing is equal. So far as I have been able to observe, no appreciable difference of general size exists. But the Malabar bird has the tail a quarter of an inch longer than the Malayan and Javan. And it is this greater length of the rectrices, combined with the shorter coverts, that makes the discrepancy between the proportions of the rectrices and coverts so striking. Dr. Stoliczka further remarks, " One thing is certainly clear, namely, that the greater length of the tail-coverts in the Malayan bird, as compared with the Indian, is not *constant* "*. As we have seen above, in Mr. Blyth's opinion " there cannot be a doubt of the fact." And again, two years later, the same author (Cat. Calc. Mus. p. 214) specifies the Malayan race as " with lower tail-coverts, reaching to nearly end of tail ; " and the Indian and Burmese race as " with constantly much shorter tail-coverts." The validity of this distinguishing character was also recognized by Horsfield and Moore (Cat. E. I. Co. Mus. i. p. 274) ; and Mr. Moore, while referring the Malabar bird to *Coracias puella*, Lath., named the Malayan *I. malayensis*.

I may add that since 1846 I have examined numbers of examples, both from Malabar and from the Malayan peninsula, and in adult birds I have invariably found them to be distinguished by the characters which I originally pointed out.

Dr. Stoliczka proceeds, " I can see no striking difference in the lazuline or blue coloration of ♂ and ♀ specimens from South India and those from Burma, and again between these and others from Malacca." I have never seen male examples of the Burmese *Irena* ; but I must still insist that a striking, well-marked, and easily recognizable difference does exist between the blue colour of the Malabar and the Malayan-peninsula *Irena*. I have placed a series of examples from those two regions before indifferent persons, and they have in all cases, without hesitation, and by means of the colour alone, separated the Malabar from the Malayan and Sumatran form.

Whether the characters which, I still maintain, do distinguish the Malabar, the Malaccan, and the Javan species from one another are sufficient to entitle each to a separate specific designation is a fair matter of opinion. Yet the terms local variety, climatal variety, local race, geographical race, subspecies, &c., though an easy way of expressing indefinite ideas, seem artificial, as opposed to the term " species," so long as the term " species " does not involve the finite conception of fixity. The three titles *I. puella, I. cyanea, I. turcosa* represent three facts in Natural History—facts when considered side by side with others, either similar or opposite, of importance to the naturalist who is investigating the origin of species or the reasons of the present geographical distribution of animals.

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* The italics are Dr. Stoliczka's.

Dr. Stoliczka very rightly observes that the fauna of the hill-ranges of Malabar shows a decided affinity to the Malayan, although that country is separated by many hundreds of miles from the Indo-Malayan region. But hardly one Malabar bird is identical with an Indo-Malayan, unless it is also found occurring in the intervening countries. The Malabar *I. puella* is a case in point. The genus is Indo-Malayan, extending over Java, Borneo, and the Philippines to the eastward, and northwards to Assam, although not crossing the narrow Assam valley to the seemingly equally favourable slopes of the Himalayas. If the Malabar *Irena* were identical with either the Malaccan, the Javan, or the Philippine species, it would form an exception to this general law of diversity. Again, the avifauna of the Malaccan peninsula is almost identical with that of Sumatra. These two areas possess most of their species in common, and representative forms are rare, if even known; and no difference can be detected between Sumatran and Malaccan examples of *Irena*. The ornis of Java differs considerably from that of Malacca and Sumatra; and the Javan *Irena* is also found to differ. Again, the Philippine ornis, though generally Indo-Malayan in its character, still contains genera not belonging to that region, and its relations are even more remote than those uniting Malabar, Malacca, and Java. The Philippine *Irena*, in conformity with the aberrant characters of its area, differs more from the Malabar, Malayan, and Javan species than they do among one another. Are we not then, by the bestowal of distinctive titles, to give currency to these facts because we happen to disagree in our definitions of the term "species"? Is it not begging the whole question of the origin of species, and the laws which govern their variation, to maintain that two forms palpably differing in certain constant characters are not different? As generally understood, the problem to be solved is, Why do they differ? Why does one member of a genus differ more widely from a given standard than another of its members? We shall never discover the solution if we start by refusing to acknowledge the facts presented to us by nature, or if we make the amount of difference necessary to establish a species an arbitrary matter of degree, dependent on individual opinion, and not on positive fact.

67. LANIUS LUCIONENSIS, Linn.

Probably *L. cristatus,* Linn., which certainly occurs in the Malay peninsula. I very much doubt the Nicobar and Andaman *habitat* of *L. lucionensis.*

68. LANIUS MAGNIROSTRIS, Less.

Lanius waldeni, Swinhoe, P. Z. S. 1870, p. 131, pl. xi. *ex* Szechuen, is nothing but this species in breeding-plumage; and I am much disposed to the opinion that *L. phœnicurus,* Pall. is *L. cristatus,* Linn. in breeding-plumage. Lake-Baikal examples are only to be distinguished from Indian by the purer rufous of the upper plumage and the purer white of the under. I have received *L. cristatus* from the N. W. Provinces of India.

69. TEPHRODORNIS SORDIDA, Wallace.

This is Lesson's specific title (Voy. Bél. p. 253, 1834) for *T. pondiceriana* (Gm.). *T. grisola,* Blyth (described J. A. S. B. 1842, p. 799, named *op. cit.,* 1843, p. 180 bis) is probably the species meant. It is again referred to by Mr. Blyth, *op. cit.* 1846, p. 305, where he states that he had received an undoubted specimen from Java and another from Penang. The type was shot by Mr. Blyth in the neighbourhood of Calcutta along with, curiously enough, a young individual of *T. pondiceriana.* It is included by Dr. Jerdon in his 'Birds of India' (i. p. 411).

The type of Swainson's genus *Tephrodornis* is *Lanius virgatus,* Temm.=*Lanius gularis,* Raffles (if the Javan and Sumatran species are really identical, which has yet to be proved). *Tephrodornis* is therefore, on Dr. Stoliczka's own showing, equal to *Tenthaca,* Hodgs., the type of which is *Tenthaca pelvica,* Hodgs. The only generic title available for the other members of the group is *Keroula,* Gray.

72. Dissemurus malayensis (A. Hay).

Is *D. rangoonensis* distinct from *D. malayensis*? In other words, is the Burmese species different from the inhabitant of the Malaccan peninsula? A want of examples has hitherto prevented a decision being come to on this point. *Edolius setifer,* Temm. is the Javan *Dissemurus,* and is distinct from the Malaccan.

73. Pericrocotus flammeus (Forster)?

From the account given it is impossible to decide what species is referred to. It must not be forgotten that Mr. Blyth, after comparing Assamese examples of *P. elegans* (M'Clelland) with *P. flammeus,* from Western India, was unable to distinguish them (Ibis, 1866, p. 369). *P. flammeus, ex* Java, can only be distinguished from true *P. flammeus, ex* Ceylon, by its smaller size, and by the outer edge of the last orange and black secondary being entirely orange, and not broken through with black. This distribution of colour, the orange-red of *P. flammeus* and its affines being replaced by crimson, is observable in *P. brevirostris.* Should it hold good in all Javan individuals, it will furnish a reliable distinguishing character, and the species will require a new title, unless the Javan bird is identical with *P. xanthogaster* (Raffles) *ex* Sumatra.

In all Burmese male individuals of *P. speciosus* (Lath.) which have come under my notice, the middle pair of rectrices have the outer webs wholly red, the inner webs only being black. I have never observed this peculiarity in either Himalayan or Central-Indian examples. The Burmese form is also smaller. An Assam example in Major Godwin Austen's collection also exhibits this peculiarity.

76. Copsychus mindanensis (Gm.).

Mr. Blyth (J. A. S. B. 1847, p. 139) was, I believe, the first author who identified the Malayan D'hyal with the Philippine. Yet, so far as can be gathered, no comparison has ever been made between Philippine individuals and those found either in the Malayan peninsula or elsewhere. That a black and white D'hyal occurs in Mindanao may be inferred from what Dr. v. Martens says (J. f. O. 1866, p. 10). Montbeillard calls the species to which

Gmelin gave the above title *Merle de Mindanao,* and states that it was brought home by Sonnerat. Were it not for the name bestowed, we should have no means of tracing its origin.

Mr. Blyth (*l. c.*) separated the Ceylon and Malayan from the Indian *Copsychus,* on the ground that the female of this last was ashy above, while the females of the two former have the back of a much darker blackish ash. This distinction appears to be well founded. The Ceylon bird has received in consequence the title of *C. ceylonensis,* Sclater. The Malabar *Copsychus,* however, would seem also to belong to the Ceylon form. In the generality of Ceylon and Malabar examples the bill is extremely short; but in some it is scarcely less than in true *C. saularis.*

From both the Ceylon and Indian forms the Malayan is said by Mr. Blyth to differ (*l. c.*) by having only three (and not four) outer rectrices white. I have no Malaccan example to compare; but this distinction holds good in the Javan D'hyal, *C. amœnus* (Horsf.). And such is the case also in *C. pluto.* The D'hyals I have examined from all parts of India, Malabar excepted, from China, Cambodia, and Tongoo, are not to be separated. At the same time the bills vary much in their dimensions. The nestling changes at once from its brown and rufous nestling-plumage into that of the adult. The pure white outer edges of the two secondaries appear in the earliest stages, even when the quills are still edged with pale rufous.

Comparison must be made between Malaccan, Sumatran, Javan, and Philippine individuals before the correct title for the Malaccan D'hayal can be determined.

77. CITTACINCLA MACRURA (Gm.).

I am unable to detect any characters whereby individuals from Ceylon, Central India, Malacca, Java, and Sumatra can be distinguished. A very young bird from the Salween river has the belly, thigh-coverts, and under tail-coverts pure white.

78. LOPHOCITTA GALERICULATA (Cuv.).

Platylophus, Sw. (Faun. Bor. Amer. 1831), has precedence over *Lophocitta,* G. R. Gray*. This curious species is placed by Dr. Stoliczka under the *Ampelidæ.*

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* [Cf. Gray, Cat. Gen. B. App. no. 1042.—ED.]

79. CALORNIS CANTOR (Gm.).

Without having to decide the question whether the Philippine and Malaccan *Calornis* are the same species, we must suppress Gmelin's title *cantor*, Scopoli's name *panayensis* (founded, equally with Gmelin's, on Sonnerat's 73rd plate) having precedence. *Turdus chalybeus* is Horsfield's title for the Javan *Calornis*; *Turdus insidiator* that of Raffles for the Sumatran. The individual described by Dr. Stoliczka seems to be a young bird, and in that phase of plumage which misled Dr. Horsfield into describing the young Javan bird as distinct from *C. chalybeus*, under the name *T. strigatus*.

80. EULABES JAVANENSIS (Osbeck).

It is clear from the remarks made under this title that the learned Doctor has never had the Malaccan *E. javanensis* in his hands. Two species of *Eulabes* inhabit the Malayan peninsula:—one allied to, if not even identical with, *E. intermedia*, A. Hay, *ex* Nipaul and Tenasserim; and a second, closely related to *E. javanensis*, *ex* Java. The distinctness of these two species has never until now been questioned by any author. Professor Schlegel, an author who certainly does not admit the validity of a species off hand, has not only acknowledged the specific distinctness of *E. intermedia*, but has figured the bill, head, and lappets of *E. javanensis* and *E. intermedia* in the same Plate (Neder. Tijdsch. Dierk. i. p. 1), to exhibit the contrast.

E. intermedia was described by its author from Indian examples. At the time he was not aware that the same or a very closely allied form occurred in the Malayan peninsula. The title was chosen to denote the intermediate position *E. intermedia* occupied between the Cingalese and South-Indian *E. religiosa* (Linn.) and the Malaccan form *E. javanensis* (Osbeck). A comparison I have been able, recently, and for the first time, to make between the large Malaccan *Eulabes* and a Javan example of true *E. javanensis* (Osbeck) leads me to question the identity of even these two birds. Dr. Jerdon is perfectly correct in the dimensions he gives of the altitude of the bill of *E. javanensis*, *ex* Malacca. Its shortness, together with its great height, at once distinguishes this species from *E. intermedia*.

I have again examined an Andaman example of *E. andamanensis,* Tytler, and still retain the opinion that it is distinct from *E. intermedia.*

81. MUNIA RUBRONIGRA, Hodgs.

Loxia sinensis, Gm., *ex* Sonnerat, and also of Latham, is a Greenfinch. Dr. Jerdon refers to *Coccothraustes sinensis,* Briss., founded on Edwards's 43rd Plate, in which a black mesial line is altogether wanting. True *M. malacca* (Linn.) does not appear to occur out of Ceylon and peninsular India, extending to Bengal. But the *Munia rubronigra* group extend to the Philippines and Celebes.

82. MUNIA MAYA (Linn.).

This is the Sumatran form, and may be indigenous to the Malay peninsula. *Munia ferruginosa* (Sparrm.) is the Javan form, and is perfectly distinct. Latham included it under Sparrman's title in the second supplement to the Synopsis, and adopted the name, without acknowledgment, in the supplement to his 'Index Ornithologicus.' *Loxia leucocephala,* Raffl., is a synonym of the Sumatran species, and *Fringilla majanoides,* Temm. (Pl. Col. 500. fig. 3), of the Javan.

88. MACROPYGIA RUFICEPS (Temm.).

The Malaccan *Macropygia,* so far as I know, has never been satisfactorily identified. I have never met with an example; and it appears to be an extremely rare bird in collections. The Javan *M. ruficeps* is stated by Dr. Jerdon also to inhabit Tenasserim. Have examples been compared? The identity of the Malayan and Moluccan birds is most improbable.

90. GEOPELIA STRIATA (Linn.).

Columba sinica, Linn., was founded on Albin's plate 46; and from it likewise Brisson took his description. Neither Albin's wretched drawing nor his account agrees well with this species. *Columba malaccensis,* Gm., is undoubtedly the Malayan and Mauritius bird. Gmelin bestowed the title on Sonnerat's *petite Tourterelle de Quéda.* Sonnerat described the species with great minuteness; and he added that it had been introduced into the Mauritius, where it had largely multiplied. Thus the type of *C. malaccensis,* Gm., came from a locality touching Province Wellesley.

XIII.—*On the Land-birds of Juan Fernandez.*

By P. L. Sclater, M.A., Ph.D., F.R.S.

(Plate VII.)

What is commonly known by the name of Juan Fernandez is really a group of islands, or rather of two larger islands and several smaller ones, lying in the South Pacific Ocean some four hundred miles from the coast of Chili, in about 34° S. lat. The indigenous fauna of this island-group, like that of all oceanic islands, possesses special points of interest; and I need therefore make no apologies to the readers of 'The Ibis' for endeavouring to put together the little that is known concerning its land-birds, more especially as there is some hope that this may lead to a more complete investigation of the subject.

The largest of the Juan Fernandez group is called *Mas-a-tierra* (or more towards land), and contains an area estimated as about seventy square miles. Its northern half presents a lofty basaltic formation, intersected by narrow fruitful valleys; the southern half is less elevated, but rocky and barren.

The second island of the group, called *Mas-afuera* (*i. e.* further out from land), lies about ninety miles outside Mas-a-tierra, and is said in most geographical books to be little more than a volcanic rock. Of the smaller islets it is not necessary for our present purpose to say any thing.

The Juan Fernandez group was well-known to the earlier navigators of the Pacific, but was never explored zoologically, so far as I know, until it was visited by Captain King during the commencement of the well-known Admiralty Survey of the Straits of Magellan. In the first volume of the 'Narrative' of this expedition, by King and Fitzroy (p. 302 *et seq.*), will be found an account of the observations made by Captain King during his short stay in Mas-a-tierra in February 1830. "Land-birds," he says, "are not numerous; some Pigeons, said to have been introduced, and a few Hawks are occasionally seen, besides three species of Humming Birds two of which are new to science"*.

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* These two supposed new Humming-birds were afterwards shortly characterized by Captain King in the Proc. Zool. Soc. 1830-31, p. 30, as

The next naturalist that explored Juan Fernandez was the late Mr. Thomas Bridges, C.M.Z.S., so well-known for his zoological discoveries in Bolivia and Chili, of which, most unfortunately, no connected account has ever been published. Mr. Bridges paid a visit to Mas-a-tierra, some time in 1853 or 1854, and collected a large number of specimens of Humming-birds, but no other birds, so far as I know. Most of the principal collections in Europe were supplied with skins of the Humming-birds of Juan Fernandez by this indefatigable collector*.

More recently the authorities of the National Museum of Santiago, in Chili, have sent zoological collectors both to Mas-a-tierra and Mas-afuera, and have obtained, beside the Humming-birds previously known, specimens of a closely allied species of *Eustephanus* from the latter island, and examples of several other species of land-birds hereafter mentioned†.

From these sources we have become acquainted with the existence of the following species of land-birds in Juan Fernandez.

1. ANÆRETES FERNANDEZIANUS. (Plate VII. fig. 1.)

Culicivora fernandeziana, Philippi, Wiegm. Arch. 1857, pt. i. p. 265; Ph. et Landb. Cat. Aves Chil. p. 22.

Euscarthmus fernandezensis, Gray, Hand-list, i. p. 351.

This species is a representative form of *A. parulus* of Chili, but is distinguishable, as pointed out by Dr. Philippi, by the absence of olive tinge in the plumage, the pure white of the breast and belly varied with more strongly marked black streaks, and the longer bill. The specimens described by Dr. Philippi were obtained for the Museum of Santiago, in one of the collecting-expeditions above mentioned.

There is a single mounted specimen of this bird in the British

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Trochilus fernandensis and *T. stokesi*. As has been subsequently shown, they are really male and female of the same species.

[*] Mr. Bridges appears to have been quite aware that *Eustephanus fernandensis* and *E. stokesi* were the two sexes of the same species; for M. Jules Verreaux informs me that Mr. Bridges expressly spoke of this being the case in conversation with him, at Paris, after his return from South America.

[†] *Cf.* Sclater, P. Z. S. 1865, p. 556.

Museum (*Euscarthmus fernandezensis* of Mr. Gray's Hand-list), whence the figure (Pl. VII. fig. 1) has been taken.

2. OXYURUS MASAFUERÆ (Plate VII. fig. 2).

*Synallaxis masafueræ**, Ph. et Landb., Wiegm. Arch. 1866, pt. i. p. 124, et Cat. p. 13.

This little bird was described by Philippi and Landbeck, in one of their articles on new Chilian animals, published in Wiegman's Archiv. It is a close ally and representative of *Oxyurus spinicauda*, a well-known Chilian form of Synallaxinæ, the only previously described species of the genus.

O. masafueræ seems to be restricted to the island of which it bears the name, as Dr. Philippi's collectors never obtained specimens in Mas-a-tierra, although they made a diligent search for it. In Mas-afuera it is found in the woods in small flocks, and has the same habits as its Chilian representative.

For the opportunity of examining and figuring this species I am indebted to the kindness of Mr. Wilson Saunders, who has obliged me with the loan of two specimens, which were forwarded to this country by Mr. Edwin Reed. These were, no doubt, duplicates obtained by Dr. Philippi's collector.

3. EUSTEPHANUS FERNANDENSIS.

Male.

Trochilus fernandensis, King, P. Z. S., 1830–1, p. 30.
Eustephanus fernandensis, Gould, Troch. iv. pl. 267.

Female.

Trochilus stokesi, King, P. Z. S., 1830–1, p. 30.
Eustephanus stokesi, Gould, Troch. iv. pl. 266.

Mr. Bridges, as I have already stated, seems to have been well aware that these two very different-looking birds are the male and female of the same species; but either he did not inform Mr. Gould of it, or failed to convince him on the subject, as we find no suspicion of the fact mentioned in the great work on Humming-birds.

In December, 1866, Mr. Landbeck, subdirector of the Na-

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* In Wiegmann's Archiv the specific term is misspelt "*masafucræ.*"

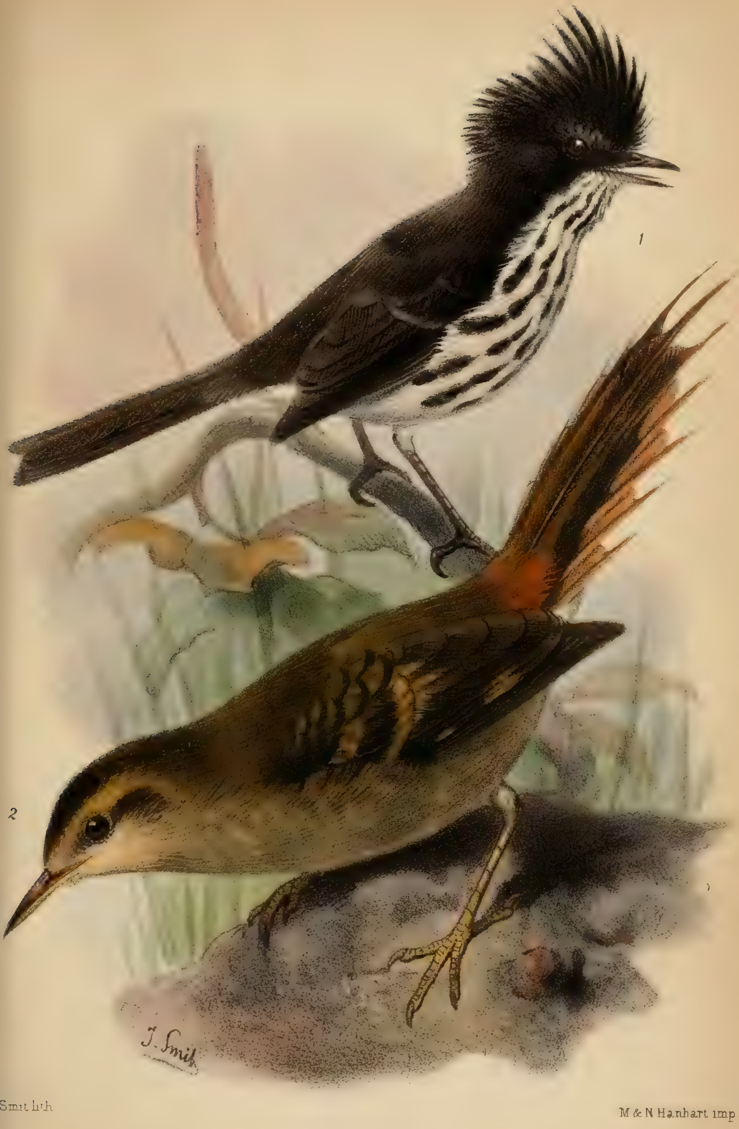

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Fig. 1. ANÆRETES FERNANDEZIANUS
– 2. OXYURUS MAS-AFUERÆ.

tional Museum of Santiago, transmitted to me specimens of the adult and young of both sexes of this bird, with the information that they had been obtained by collectors sent to Juan Fernandez by the Museum of Santiago, and that as they had been found paired, and as the red and green young had been found together in the nest, there could be no longer any doubt on the subject*. The fact of the young differing at so early a stage is somewhat unusual, but is not without parallel. In the case of the Upland Goose (*Chloephaga magellanica*) there is nearly as early a divergence of the sexes†.

4. EUSTEPHANUS LEYBOLDI, Gould, Ann. Nat. Hist. ser. iv. vol. vi. p. 406.

Under the name *Eustephanus leyboldi*, Mr. Gould has described a green Humming-bird from Mas-afuera closely resembling the so-called *E. stokesi* (*i. e.* the female of *E. fernandensis*), but differing in having the throat differently spotted, so as rather to resemble *E. galeritus*, and the inner webs of the rectrices wholly white. Several red Humming-birds collected at the same time differ slightly from the male of *E. fernandensis*. Not having myself the slightest doubt of *E. stokesi* being the female of *E. fernandensis*, I have also no doubt that Mr. Gould's green *E. leyboldi* is the female of the corresponding red bird of Mas-afuera. Although in representative species the females are often similar, while the males differ, it is possible that the contrary may sometimes be the case; and here, I suppose, we have an instance of it. I therefore adopt *leyboldi* as the specific name for the *Eustephanus* of Mas-afuera.

5. EUSTEPHANUS GALERITUS (Mol.).

Trochilus galeritus, Mol.: *Eustephanus galeritus*, Gould, Mon. Troch. vol. iv. pl. 265.

Trochilus sephanoides, Ph. et Landb. Cat. Av. Chil. p. 9.

There can be no doubt, I think, of this Chilian species being also found in Mas-a-tierra, although it would not appear to be likely that such would be the case. *E. galeritus* was, I believe, the third species of Humming-bird obtained by Captain King in Mas-a-tierra; and Mr. Gould tells me that Mr. Bridges likewise brought specimens of it from the same island. Messrs. Philippi and Landbeck also record its occurrence in Juan Fernandez in their catalogue of the birds of Chili.

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* See my remarks on exhibiting these specimens to the Zoological Society, P. Z. S. 1866, p. 556.

† *Cf.* P. Z. S. 1858, p. 289. [Also *cf.* Darwin, Descent of Man, ii. p. 219.—ED.]

6. BUTEO ERYTHRONOTUS (King).

Haliaetus erythronotus, King: *Buteo erythronotus,* Strickl. Orn. Syn. p. 34; Ph. et Landb. Cat. de las Aves Chilenas, p. 3.

Mr. Salvin procured a skin of this Buzzard, from a collection sent to this country by Mr. Reed, which was labelled as coming from Mas-afuera. It was, no doubt, obtained by the same collector who discovered *Eustephanus leyboldi* in that island.

It appears therefore that the terrestrial avifauna of the Juan Fernandez Islands, so far as it is yet known, comprehends only six species. These may be divided into two categories.

1. Species known to occur elsewhere—*Eustephanus galeritus* and *Buteo erythronotus.*

2. Species not known to occur elsewhere—*Anæretes fernandezianus, Oxyurus masafueræ, Eustephanus fernandensis,* and *E. leyboldi.*

As regards the first category, it is sufficient to remark that the two species contained in it are both well-known inhabitants of Chili.

As regards the second category, the first two in the list, although specifically distinct, are more nearly related to Chilian species than to any others, and are, in fact, representative species—the former of *A. parulus,* and the latter of *O. spinicauda.*

The case of the Humming-birds requires a little more consideration. There can be no doubt that their nearest ally is *Eustephanus galeritus* of Chili, the only other known member of the genus *Eustephanus;* but as *E. galeritus* itself occurs in Mas-a-tierra, it would be, at first sight, incorrect to call them representative species. Yet I think there can be no doubt that this is really the case, and that we have here an interesting example of how it may come to pass that two representative species may coexist in the same area. The original colony of *E. galeritus,* or rather of the *Eustephanus priscus,* from which all existing *Eustephani* are descended, arrived in Juan Fernandez with the green plumage which, at that period, clothed both sexes of *E. galeritus* and the females of *E. fernandensis* and *E. leyboldi.* Natural selection or the *"vis Darwiniana,"* as we may call it (to which, according to Mr. Mivart, some other unknown *vis,* the *vis Mivartiana,* must be added), set to work, especially on the male, and converted him into the brilliant red bird which he now is, leaving the female scarcely changed. During this period no fresh arrivals of the parent form, at any rate none of importance, could have taken place, or the operation of the *vis Darwiniana* on the male *Eustephanus* could hardly have produced any result. Within recent times, however, there has been a fresh irruption of *Eustephanus galeritus* from the neighbouring mainland; and we have thus both representative species now coexisting within the same area.

Mas-afuera must have received its colony of *Eustephani* from Mas-a-tierra after the male *E. fernandensis* had become red, but before the female had deviated so far from the parent form as she now does. Otherwise we cannot account for the female of *E. leyboldi* being more like *E. galeritus* than the female of *E. fernandensis.*

From all that has been before stated it will be obvious that, so far as we can judge from our present knowledge of the terrestrial avifauna of the Juan Fernandez group of islands, the following conclusions may be drawn.

1. The Juan Fernandez group belongs strictly, so far as its avifauna is concerned, to the Chilian or Patagonian division of the Neotropical Region.

2. All the species known to occur in it are either identical with, or closely allied representatives of, Chilian forms.

3. The Juan Fernandez islands have been peopled with life within a comparatively recent period, by immigration from the adjoining mainland of Chili.

XIV.—*On the* Coraciidæ *of the Ethiopian Region.*

By R. B. Sharpe, F.L.S., Libr. Z.S. &c.

(Plate VIII.)

It had been my intention, on the completion of my 'Monograph of the *Alcedinidæ*,' to proceed with a similar work on the *Coraciidæ*; and I had already got together a considerable quantity of notes on the subject, when I heard that Mr. D. G. Elliot was engaged in preparing a Monograph of the same family. On learning this fact, I deemed it best to give up my project; but not liking to abandon the idea entirely after spending so much time in gathering data, I have in the present paper strung together a synopsis of the African species of this family, so as to form the third of the series of essays I have now in hand on the Ornithology of the Ethiopian Region.

The *Coraciidæ* seem to me to be divisible into three subfamilies, which may be characterized as follows:—

- *a.* nares ad basin maxillæ positæ, setis obtectæ.
  - *a'.* tarsus brevior quam digitus medius * ...... *Coraciinæ.*
  - *b'.* tarsus longior quam digitus medius .... *Brachypteraciinæ.*
- *b.* nares nudæ, lineares, in mediâ maxillâ positæ .. *Leptosominæ.*

The first subfamily includes the true Rollers (*Coracias*) and the Broad-billed Rollers (*Eurystomus*); the second the Long-legged Ground-Rollers (*Brachypteracias, Atelornis, Geobiastes*); and the third subfamily the curious form *Leptosoma.* The distribution of the true Rollers extends over the Palæarctic, Ethiopian, and the Indian Regions, a single isolated and distinct species, *Coracias temmincki,* being found in the island of Celebes. The genus *Eurystomus* is divided into two sections—the Blue Broad-billed Rollers (*Eurystomus,* Vieill.), and the Ruddy Broad-billed Rollers (*Cornopio,* Cab. & Hein.). No structural difference can be found in the types of these two sections, and the distinction between them consists in style of plumage only. Nevertheless the members of the two sections occupy distinct geographical areas, the ruddy-coloured species being strictly Ethiopian, and the blue-coloured species strictly Indian and Australian.

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* In the case of all the genera here examined, the tarsus is measured on the underside, along the tarso-metatarsal bone, from the ankle-joint to the base of the hallux, and in the measurement of the middle toe the nail is not taken into consideration.

From studying the Kingfishers (*Alcedinidæ*), I am led to consider that the possession of a blue colour by one species, and of a ruddy tint by another, does not indicate remote relationship. This is especially illustrated by *Halcyon coromanda,* and the rufous *Ceyces* (*C. rufidorsa,* &c.), when compared with the other members of their respective genera. So with *Eurystomus.* Change the lilac tints into blue all over the body, and the African Broad-billed Rollers assume the exact style of coloration of their eastern congeners.

All the Rollers (*Coraciinæ*) are decorated with brilliant feathers about the throat. They also possess the power of puffing out the throat and cheeks. I am unable, from want of material, to state precisely the exact number of blue-coloured species of *Eurystomus,* as the number of members constituting this group appears to be uncertain, and a lengthened study may determine the existence of more species than are at present supposed to exist. Their range appears to extend throughout the Indo-Chinese region and the Australian and Austro-Malayan subregions—two species, *E. azureus,* G. R. Gray, from Batchian, and *E. crassirostris,* Sclater, from the Solomon Islands, being apparently peculiar to the latter division. The ruddy-coloured *Eurystomi* take their place in Africa and Madagascar. No species of *Eurystomus* is found, so far as is at present known, anywhere between the above-mentioned portions of the Indian and Ethiopian regions. Throughout the Western Palæarctic region *Coracias garrula* is widely distributed, and its range extends along the eastern limits, occurring in Cashmere and Afghanistan; in the Ethiopian region it is migratory. Here its place is supplied by *Coracias nævia,* which is found throughout the entire length of Africa, being the only typical *Coracias* indigenous to the region. Beside these, there are three long-tailed Rollers (*Coraciura,* Bp.) which are peculiar to the Ethiopian region, and form a section of the genus *Coracias.* In India we find the well-known *C. indica* replaced to the eastward in Assam by *C. affinis.* Where the ranges of these two birds overlap they are known to interbreed, and hybrids are often to be seen in collections*. As before stated, Celebes possesses one peculiar species, *C. temmincki.*

Secondly, we come to the Ground-Rollers, which I propose to raise to the rank of a subfamily. They are distinguished from the true Rollers by their long legs. So rare are all the species that little is known of the habits of these birds. I am the fortunate possessor of the three known species, each of which is the type of a distinct genus. Mr. Crossley, who has lately returned from Madagascar, and to whom I am indebted for the specimens which adorn my collection, could tell me little of their habits. *Atelornis* we know, from the observations of Mr. Edward Newton, to be crepuscular in its habits; and so Mr. Crossley found it to be. The second species of *Atelornis,* viz. *A. squamigera,* I find, is not really congeneric with *A. pittoides,* but belongs to a distinct genus, which may be called *Geobiastes,* the characters of which are given in the Plate (Pl. VIII. figs. 1, 2).

Mr. Crossley never met with either this bird or *Brachypteracias* himself. He tells me that the only specimens he obtained were procured by the natives, who informed him that they only came abroad in the night-time, and sought their food on the ground, this latter fact being confirmed by the earth which always remained on their bills. Madagascar is the home of these curious birds, which, though Coraciine in their affinities, are among the most aberrant forms of which that wonderful island gives us so many examples. I think that their habits and structural peculiarities warrant their separation as a distinct subfamily. Along with the skins of *Atelornis,* Mr. Crossley sent two skele-

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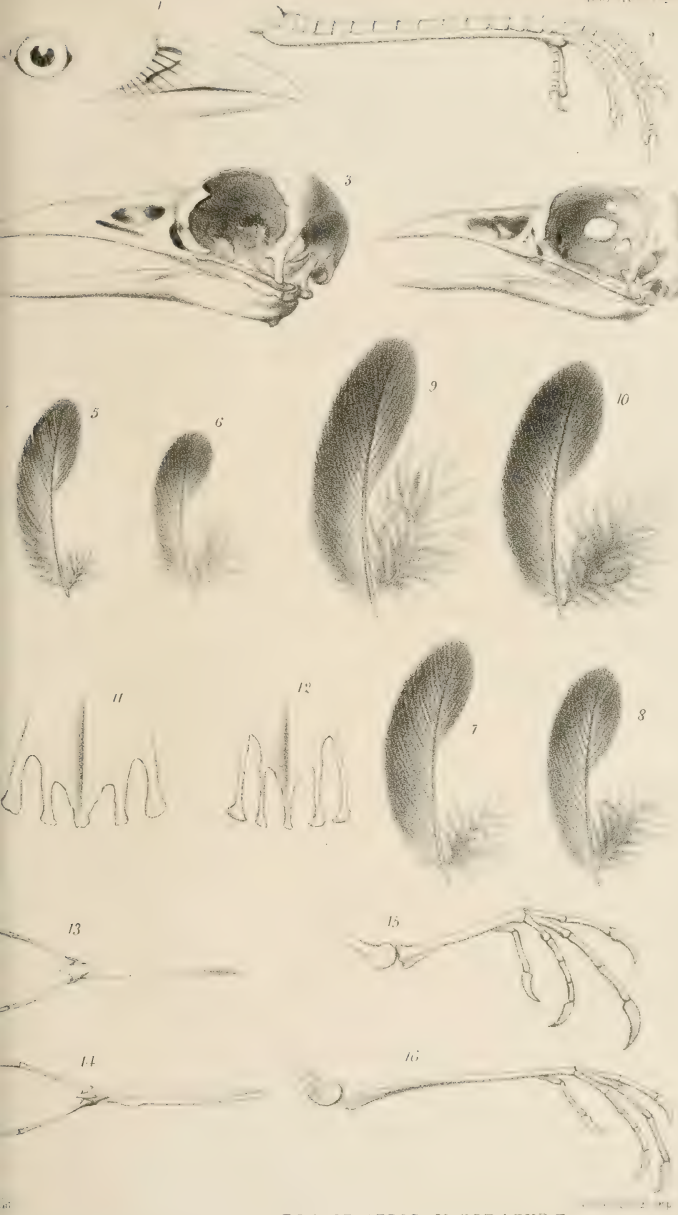
* [We are not at all sure that these specimens in apparently intermediate plumage between the two perfectly segregated forms *C. indica* and *C. affinis* are hybrids at all, but consider that, in the absence of all *observed facts* bearing on the point, the diversity of colouring is more reasonably to be attributed to the imperfect segregation of the species in the particular locality in which these varieties are found. The point has been often discussed with reference to two Pheasants of the genus *Euplocamus, E. lineatus* and *E. horsfieldi* (*Cf.* Scl. P. Z. S. 1863, p. 120), and also in the case of the North-American Woodpeckers of the genus *Colaptes*—*C. auratus,* and *C. mexicanus* (*Cf.* Baird, Birds of N. Am. p. 122). Perhaps Mr. Sharpe will allow us to suggest that it is not in a *collection* that satisfactory evidence concerning hybridism must be sought.—Ed.]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DISTINCTIVE CHARACTERS OF AFRICAN CORACIIDÆ.

tons of this curious Ground-Roller, one of which has passed into my hands; and I think that a few remarks on the osteology may be interesting. As regards the egg, which Mr. Crossley also sent, I may remark that it is white like that of most Rollers.

On *Leptosoma* a most interesting paper has been written by Dr. Sclater (P. Z. S. 1865, p. 682). This is another wonderful form, peculiar to Madagascar, and has been generally placed by ornithologists with the Cuckoos; but from the material then at his command, Dr. Sclater conclusively showed that its affinities were Coraciine rather than Cuculine. Since then a capital account of its habits, translated in detail below, has been published by MM. Pollen and van Dam. The curious habit of tumbling in the air, essentially a Roller-like peculiarity, first noticed by Messrs. Roch and Newton, is recapitulated; and an interesting fact is added, that these naturalists found a bird engaged in building its nest in a tree, a fact which further relegates the affinities of the genus to the *Coraciidæ*. Having the genus *Brachypteracias* in view, I would not, as Dr. Sclater proposes, elevate the genus *Leptosoma* to the position of a distinct family; but being separated as it is from all the other genera by the abnormal position of the nostrils (which are situated in the middle of the upper mandible), the thick-set head, and the total dissimilarity of the sexes, no one will deny its right to be placed at the extreme end of the family *Coraciidæ*. When the osteology of *Brachypteracias* becomes fully known, I believe that this form will be found to be nearer to *Leptosoma* than any other known genus of the *Coraciidæ*, while *Geobiastes* will connect *Brachypteracias* with *Atelornis*. This last-named form is the nearest to *Coracias*; and the subjoined notes illustrate a few of the osteological peculiarities of these two genera. Not being a practised osteologist, I shall attempt nothing further than a comparison of the two last-named genera with the principal portions of *Leptosoma* illustrated by Dr. Sclater. It will be remembered that one of the most striking points brought to notice in this gentleman's paper was the fact that in *Leptosoma* the *alæ nasi* were completely ossified. Unfortunately Dr. Sclater had not at that time a skull of *Coracias* for comparison; but he found that in *Eurystomus* "a very similar formation occurs, but is not carried to the same extent, the covering of the nasal passages remaining membranous in that form."

In *Coracias* (Pl. VIII. fig. 3) this ossification takes place; but in *Atelornis* the nasal coverings are not ossified (fig. 4).

In other respects the crania of the two genera are very similar, though the orbital cavity is larger in *Coracias*, and the lachrymal bones of a different form, as will be seen from the Plate.

The next peculiarity in *Leptosoma* pointed out by Dr. Sclater is the curious axillary plume attached to the base of the body-feathers. In the accompanying Plate are illustrated the body-feathers of all the genera of the *Coraciidæ*; and it will be seen that in *Coracias* the axillary plumule is scarcely developed at all, equally in *Eurystomus* and *Brachypteracias*, more in *Geobiastes*, and most in *Atelornis* and *Leptosoma*.

I regret that the rarity of *Atelornis* prevents my destroying a skin for the purpose of more closely examining the *ptilosis*; and as the skeleton before mentioned when sent home was already divested of the flesh, there was no opportunity of observing the arrangement of the feathers. Dr. Sclater has pointed out and figured the peculiar sternum of *Leptosoma*; and subjoined are illustrations of the sterna of *Coracias* (fig. 11) and *Atelornis* (fig. 12).

It will at once be noticed that the general shape of the posterior portion of the sternum exhibits the form characteristic of the *Picariæ*; but in *Atelornis* the posterior fissures are very much deeper than in *Coracias*. In both genera the episternal process is more developed than in *Leptosoma*; and they do not exhibit the "remarkable thickening of the rami of the furcula at their anterior extremities" to which attention has been drawn by Dr. Sclater in *Leptosoma*.

The tongue of *Atelornis* (fig. 14) is very similar to that of *Coracias* (fig. 13), and unlike that of *Leptosoma*. It is thin and horny, and is divided at the tip into distinct lacerations. The greatest dissimilarity between the two genera is, of course, exhibited in the legs, where the immense length of the tarsus in *Atelornis* (fig. 16) proclaims its different mode of living. For comparison the right leg of *Coracias* (fig. 15) is also figured.

I regret that my limited knowledge of osteology does not permit me to dwell more fully on the minor differences between the two genera; but I think that I have shown sufficient to demonstrate that *Atelornis* is one of the Ground-Rollers, but exhibits affinities towards *Coracias*; while I have little doubt that when the osteology of *Brachypteracias* and *Geobiastes* becomes known, they will be found to form a link between *Atelornis* and *Leptosoma*.

Subfam. I. CORACIINÆ.

Conspectus generum Coraciinarum.

a. Rostrum gracile, compressum, multo longius quam latum .... 1. *Coracias.*
b. Rostrum crassum, depressum, longitudine latitudini ad rictum æquante .... 2. *Eurystomus.*

Genus 1. CORACIAS.

	Type.
Coracias, Linn. Syst. Nat. 1735, et ed. xii. vol. i. p. 159 (1766)	*C. garrula.*
Galgulus, Briss. Orn. ii. p. 63 (1760) . . .	*C. garrula.*
Coraciura, Bonap. Consp. Vol. Anis. p. 7 (1854).	*C. cyanogastra.*

Clavis specierum.

a. cauda quadrata, rectrice extima haud elongata.
  a'. nucha pileoque concoloribus .... 1. *garrula.*
  b'. nucha alba .... 2. *nævia.*
b. cauda furcata, rectrice extima valde elongata.
  a'. gula alba.
    a''. gutture et pectore superiore læte violaceo-rubris, illo albido striato: abdomine cyaneo .... 3. *caudata.*
    b''. gutture albido striato: subtus omnino cyaneo .. 4. *abyssinica.*
  b'. gula et pectore superiore lilascenti-brunneis viridi nitentibus concoloribus: abdomine saturate ultramarino .... 5. *cyanogastra.*

1. CORACIAS GARRULA.

Coracias garrula, Linn.; Rüpp. Syst. Uebers. p. 23 (1845); Hartl. Beitr. Orn. W. Afr. p. 17 (1852); Brehm, J. f. O. 1853, p. 454; Heugl. Syst. Uebers. p. 17 (1856); Jard. Edin. N. Phil. Journ. n. s. iii. p. 242 (1856); Hartl. Orn. W. Afr. p. 29 (1857); Heugl. Ibis, 1859, p. 339; id. Peterm. Mitth. 1861, p. 21; Hartl. J. f. O. 1861, p. 104; id. Faun. Madag. p. 29 (1861); Verr. in Vins. Voy. Madag. Ann. B. p. 1 (1865); Schl. Mus. Pays-Bas, *Coraces,* p. 133 (1867); Layard, B. of

S. Afr. p. 60 (1867); Finsch, J. f. O. 1867, p. 237; Heugl. J. f. O. 1868, p. 320; id. Orn. N. O. Afr. i. p. 171 (1869); Finsch & Hartl. Orn. Ost-Afr. p. 152 (1870).

Coracias loquax, Licht. Nomencl. Av. p. 68 (1854).

Coracias bengalensis, Keul. Ned. Tijdschr. 1866, p. 380 (*err.*).

Hab. NORTH-EASTERN AFRICA and ARABIA (*Heuglin*): Abyssinia, Upper White Nile (*Heuglin*). EAST AFRICA: Somali Coast (*Heuglin*), MADAGASCAR (*Verreaux*). SOUTH AFRICA (*Layard*): Natal (*Micken, Mohr, Ayres*), Cape of Good Hope (*Layard*), Damara Land (*Andersson*). WEST AFRICA: St. Thomas (*Weiss*), Princes' Island (*Keulemans*), Galam (*Verreaux*).

As I have recently given a full account of the Common Roller in the 'Birds of Europe' it will not be necessary to enter into particulars here. The synonymy above given refers solely to the occurrence of the species in Africa. Throughout the Ethiopian region it appears to be only a winter visitant.

2. CORACIAS NÆVIA.

Coracias nævia, Daud. Traité d'Orn. ii. p. 258 (1800); Licht. Verz. Doubl. p. 20 (1823); Strickl. P. Z. S. 1850, p. 216; Licht. Nomencl. Av. p. 63 (1854).

Hairy Roller, Lath. Gen. Syn. Suppl. ii. p. 123 (1801).

Coracias pilosa, Lath. Ind. Orn. Suppl. p. xxvii (1801); Gray, Cat. Fiss. Brit. Mus. p. 34 (1848); Bonap. Consp. Gen. Av. i. p. 167 (1850); Reich. Handb. Merop. p. 49, t. ccccxxxiii. fig. 3184 (1852); Scl. Contr. Orn. 1852, p. 124; Hartl. J. f. O. 1854, p. 1; Horsf. & Moore, Cat. B. Mus. E. I. Co. ii. p. 571 (1856); Hartl. Orn. Westafr. p. 30 (1857); Cab. & Hein. Mus. Hein. Th. ii. p. 117 (1860); Hartl. J. f. O. 1861, p. 104; Gurney, P. Z. S. 1864, p. 2; Antin. Cat. Coll. Ucc. p. 27 (1865); Schl. Mus. Pays-Bas, *Coraces,* p. 137 (1867); Gurney, Ibis, 1868, p. 461; Heugl. J. f. O. 1868, p. 320; id. Orn. N. O. Afr. p. 173 (1869); Sharpe, P. Z. S. 1869, p. 569; Gray, Hand-l. of B. i. p. 75 (1869); Blanf. Geol. & Zool. of Abyss. p. 319 (1870); Bocage, Jorn. Acad. Lisb. 1870, p. 339; Finsch, Trans. Zool. Soc. vii. p. 221 (1870).

Galgulus pilosus, Bonn. et Vieill. Enc. Méth. ii. p. 867 (1823).

Le Rollier varié dans son jeune âge, Levaill. Rolliers, pl. 29 (1806).

Coracias crinita, Shaw, Gen. Zool. vii. p. 401 (1809, *ex Lath.*); Bonap. Consp. Vol. Anis. p. 7 (1854).

Coracias nuchalis, Swains. B. of W. Afr. ii. p. 110 (1837, *descr. orig.*); Gray, Gen. of B. I. p. 62 (1845); Hartl. Beitr. Orn. Westafr. p. 17 (1852); Bonap. Consp. Vol. Anis. p. 7 (1854); Layard, B. of S. Afr. p. 60 (1867).

Coracias levaillanti, Temm.; Rüpp. Syst. Uebers. p. 23 (1845); Brehm, J. f. O. 1853, p. 454; Müll. J. f. O. 1855, p. 6; Heugl. Syst. Uebers. p. 18 (1856).

Adult male. Forehead, a broad eyebrow, chin, and a spot at the base of the mandible white; head, upper part of the back, and scapulars reddish brown, glossed entirely with olive-green, so that the latter colour shows most; a very distinct patch of feathers on the nape white; coverts at the extremity and on the bend of the wing brilliant ultramarine; remainder of the least wing-coverts bright lilac; all the greater coverts reddish brown, variously tinted with lilac, dull ultramarine, and olive-green; quills black; the inner web ultramarine, at the base, the outer web broadly washed with ultramarine, inclining to cobalt toward the tips of the first primaries; the innermost secondaries for the most part lilac, becoming ultramarine or olive-green toward the tip, those nearest the back being almost entirely dull olive-green like the scapulars; lower part of the back lilac, becoming bright ultramarine on the rump and upper tail-coverts; tail for the most part ultramarine, edged with olive-green toward the tip, the middle feathers for the most part of the latter colour, but inclining to ultramarine near the base; cheeks and entire under-surface dull reddish brown, profusely striped with longitudinal lines of white, which have olive-green reflections in certain lights; flanks and under tail-coverts slightly tinged with ultramarine; under wing-coverts pale lilac, verging on ultramarine along the edge of the wing; bill black; iris olivaceous brown (almost raw sienna), feet pale yellowish olive (*Blanford*); light yellowish green (*Monteiro*); iris brown (*Jesse*). Total length 13 inches, of bill from front 1·5, wing 7·4, tail 5·5, tarsus 0·8, middle toe 1·0.

Adult female. Exactly similar to the adult male.

Young. Forehead, eyebrow, and nuchal patch very distinct; upper surface of the body olive-green; wing-coverts as in the adult, but more mixed with reddish brown, quills as in the adult, but the innermost secondaries more decided olive-green; middle of the back dull reddish brown; tail for the most part ultramarine, all the tail-feathers edged with olive-green, except the two middle feathers, which are entirely of this colour; under surface of the body dull greyish brown, becoming reddish on the flanks; all the white stripes very broad and distinct, and having a very slight greenish lustre. Total length 11·5 inches, of bill from front 1·3, wing 7·0, tail 5·5, tarsus 0·8, middle toe 1·0.

Hab. NORTH-EASTERN AFRICA: Abyssinian coast-land (*Heuglin*), Abyssinia proper (*Rüppell, Heuglin, Blanford*), Kordofan (*Petherick, Heuglin*), White Nile (*Heuglin*), Bogos Country (*Jesse, Blanford*). SOUTHERN AFRICA: Natal (*Ayres*), Transvaal (*Ayres*), Kaffraria (*Le Vaillant*), Middleburg, Eastern Cape Colony (*O'Reilly, Layard*), Damara Land (*Andersson*), Ondonga, Ovampo Land (*Andersson*). WESTERN AFRICA: Angola (*Henderson*), Huilla (*Anchieta*); Ambriz (*Monteiro*), Bissao (*Beaudouin*), Casamanze (*Verreaux*), River Gambia (*Mus. R. B. S.*).

The White-naped Roller is a bird of wide distribution in Africa, but has not yet been collected on the eastern coast, nor on the greater part of the western coast. There is, however, so far as I can see, no reason why it should not be met with in these localities, though it may possibly only occur as a passing visitant. It is probably migratory throughout the Ethiopian region; for Mr. Ayres only notices it in Natal "in summer," and specimens in my collection from Damara Land are dated by Andersson 'January 22nd, 1867,' and 'March 4th, 1865,' while Mr. Monteiro obtained it at Ambriz in February. Toward the end of March, Mr. Jesse met with it in Abyssinia; and it was plentiful on the Anseba in July. Neither of the English naturalists found it breeding in North-east Africa; nor does Dr. von Heuglin appear to have noticed it. It is clear, however, that it breeds in South Africa, and then probably retires to more northerly regions in the winter. I cannot find the slightest specific distinction in adult specimens from different localities, the variations in plumage appearing to depend on the age of the specimen. The older the bird, the more ruddy the plumage, the olive-green colouring being most pronounced in the younger stages. The following are the measurements of a series of specimens in my collection; and the result obtained confirms the opinion expressed by Dr. Finsch, that the differences of size by which Dr. von Heuglin seeks to separate the East-African birds are not of specific value.

No.	Sex.	Locality.	Authority.	Long. tot.	Rostri.	Alæ.	Caudæ.	Tarsi.
1.		South Africa....	Layard	13·7	1·7	8·1	6·3	0·8
2.	♂	Transvaal	Ayres	13·4	1·7	7·5	5·5	0·8
3.		Damara Land ..	Andersson ..	13·6	1·7	7·4	6·0	0·8
4.	♀	Otjimbinque	Andersson ..	13·0	..	7·3	6·5	0·8
5.	Juv.	Ondonga, 22/1/67	Andersson ..	11·7	1·4	7·1	5·7	0·8
6.	♀	Kokai, 9/7/68 ..	Jesse (530)	12·3	1·7	7·2	5·5	0·8
7.		River Gambia ..	Mus. R. B. S.	12·0	1·7	6·8	5·7	0·8

From these measurements it seems that the bill and tarsus, the most trustworthy characters, are the same in examples from all parts of Africa, while the lengths of wing and tail, which may depend upon the completeness of the plumage, present great variation.

Dr. von Heuglin (*l. c.*) writes:—"After a comparison of specimens of this species now lying before me from Eastern, Western, and Southern Africa, the first (East African) appear worthy of separation as a distinct race. In these birds the bill is considerably longer, the wing shorter, the white nape-spot is scarcely washed with blue, the top of the head, the hind neck, the back, and tertiary wing-coverts slightly with green. In the western and southern birds measured by me, the length of the bill was 14–15‴, that of the wings 7″.

"We obtained the White-necked Roller in the Abyssinian coast-land, in the warmer parts of Abyssinia, Kordofan, and on the White Nile, where it affects chiefly the wooded region. It is far scarcer than *C. abyssinica*, and leads a more quiet, solitary life than its congeners."

Mr. Jesse has given the following note on this species (*l. c.*):—"Iris brown; legs and feet dirty greenish yellow. Procured between Koomaylee and Soosoo, 22nd March, 1868; Senafe, May 13th. The only specimens I ever saw were shot about there, or up the passes through which the expedition passed. It was plentiful at Kokai, on the Lebka, and along the river Anseba. At Kokai, shot while hawking Flying Ants in the gloaming, in company with a number of *Caprimulgus inornatus* and a few *Eurystomus afer*."

Mr. Blanford (*l. c.*) observed this species in Abyssinia, and writes as follows:—

"This bird is very much rarer than the last (*C. abyssinica*) on the highlands. I only saw it twice, and failed to procure a specimen. It abounded in the subtropical region of the Anseba."

Mr. Ayres says:—

"This Roller is not uncommon in Natal during summer, and it also occurs on the river Limpopo; it is generally found either solitary or in pairs. Young birds may be easily reared, as they feed well on raw meat or insects; but they are troublesome from the loud discordant notes which they almost constantly utter. They give their food a toss before swallowing it, and in fact toss it down their throats."

As regards its occurrence in South Africa, Mr. Layard observes (*l. c.*):—

"Levaillant procured this bird in Kaffraria. I have received it from the neighbourhood of Otjimbinque in Damara Land; and one specimen was shot near Middleburg, on the eastern side of the colony, and sent to me by the late Mr. J. O'Reilly, magistrate of that place."

3. CORACIAS CAUDATA.

Coracias caudata, Linn. Syst. Nat. i. p. 160 (1766); Gm. Syst. Nat. i. p. 380 (1788); Gray, Gen. of B. i. p. 62 (1845); Des Murs, Icon. Orn. pl. 28 (1846); Gray, Cat. Fiss. Brit. Mus. p. 34 (1848); Bonap. Consp. Gen. Av. i. p. 167 (1850); Hartl. Beitr. Orn. W. Afr. p. 17 (1852); Reich. Handb. *Merop.* p. 47 (1852); Scl. Contr. Orn. 1852, p. 124; Strickl. & Scl. Contr. Orn. 1852, p. 154; Hartl. J. f. O. 1853, p. 400; Müll.

J. f. O. 1855, p. 6; Hartl. Orn. Westafr. p. 30 (1857); Cab. & Heine, Mus. Hein. ii. p. 116 (1860); Hartl. J. f. O. 1861, p. 104; Scl. P. Z. S. 1862, p. 12; id. P. Z. S. 1864, p. 160; Kirk, Ibis, 1864, p. 324; Hartl. P. Z. S. 1867, p. 824; Schl. Mus. Pays-Bas, *Coraces*, p. 135 (1867); Layard, B. of S. Afr. p. 61 (1867); Bocage, Jorn. Acad. Lisb. 1867, p. 134; Heugl. J. f. O. 1868, p. 319; Gurney, Ibis, 1868, p. 461; Gray, Hand-l. of B. i. p. 76 (1869); Heugl. Orn. N. O. Afr. i. p. 173 (1869); Cab. von der Deck. Reise, iii. p. 34 (1869); Sharpe, P. Z. S. 1869, p. 569; Layard, Ibis, 1869, p. 364; Finsch & Hartl. Orn. Ost-Afr. p. 154 (1870).

Coraciura caudata, Bonap. Consp. Vol. Anis. p. 7 (1854).

Rollier d'Angola, Buff. Pl. Enl. 88.

Coracias angolensis, Shaw, Gen. Zool. vii. p. 394, pl. 51 (1809, *ex Buff.*)

Coracias natalensis, Licht. Verz. südafr. Thiere, p. 16 (1842).

Coracias nævia, Bianc. Spec. Zool. fasc. iv. p. 52 (1851).

Adult male. Forehead and eyebrow hoary white; head and back of the neck pale glossy green, the feathers pale brown at the base, giving a fuscous appearance to the plumage in some places; back and scapulars pale drab, washed with green; lower portion of the back and rump splendid cobalt, inclining to vivid green on the upper tail-coverts; all the lesser wing-coverts brilliant ultramarine; the greater coverts greenish cobalt, some of the innermost tinged with ultramarine; quills black, the basal portion silvery greenish cobalt, the primary coverts being also of this colour; the primaries externally edged with deep ultramarine, inclining to cobalt toward the extremity of the feather; some of the secondaries rather broadly washed with cobalt, the innermost ones drab like the back; general colour of the tail vivid greenish cobalt; the middle feathers olive-green; the next ones tinted with this colour toward the tip, and so on toward the outermost, each feather being gradually less stained with green; the two outer rectrices much elongated and narrowed, the elongated portion gradually verging from dark blue into deep black; chin hoary white; cheeks, throat, and upper portion of the breast rich vinaceous, the shafts of some of the feathers being traced by longitudinal lines of white; rest of the under surface of the body with the under wing- and tail-coverts brilliant greenish cobalt; bill black; feet brown.

Adult female. Exactly similar to the adult male.

Young. Similar to the adults, but has all the colours perceptibly duller; the cheeks and upper part of the breast dull vinaceous, with the white streaks broader and more plainly marked, and the elongated tail-feathers not developed.

Very old specimens of this Roller may be determined by the absence of white shaft-stripes on the chest, which is consequently of a beautiful uniform vinous colour, richly glossed with lilac; the stripes on the throat are also very narrow and of a pure white. This vinaceous colour on the breast readily distinguishes it from its nearest ally, *C. abyssinica,* which has this part of the body of a beautiful greenish-blue colour.

Hab. EASTERN AFRICA: Bogue in Uzinza (*Speke*), Usaramo (*Speke*), Zanzibar (*Kirk*), Osi River (*von der Decken*), Mosambique (*Mus. Hein.*), Zambesi (*Kirk*). SOUTHERN AFRICA: Natal (*Delegorgue, Ayres*), Matabili (*Exton*), Kuruman (*Moffat, Layard*), Kurrichaine (*Verreaux*), Damara Land (*Andersson*). WESTERN AFRICA, Angola, Ambriz (*Monteiro*), Loanda (*Toulson*), Huilla, Quillengues, Ambaca (*Anchieta*).

This species, although sufficiently distinct from *C. abyssinica,* and figured as another species by Buffon, was nevertheless for some time considered to be a made-up bird. Levaillant, after an examination of Buffon's type, was convinced that it was nothing more than an Abyssinian Roller, with the head of the *Rollier de Mindanao* (Pl. Enl. 285, *Coracias indica*) stuck on. Considering Levaillant's experience of factitious birds, I am surprised he did not know better; but his confident assertion misled all the best ornithologists till the unfortunate bird fell under the notice of Dr. Pucheran (Rev. Zool. 1845, p. 369), who, with that wonderful patience which has rendered him one of the most esteemed ornithologists for the unravelling of confused synonymy, at once detected the error, and restored this beautiful Roller to its proper position in the natural system.

So far as can be at present determined, the Long-tailed Roller replaces the Abyssinian Roller throughout the southern portion of the Ethiopian region. It seems, however, to extend its range along the eastern coast, and to be found within the limits of the Abyssinian subregion.

Dr. von. Heuglin (*l. c.*) remarks:—"Speke collected this beautiful bird in Bogue in Uzinza; and I believe I have often seen it in the lowlands, south-west of the Gazelle river, where a Roller, unknown to me, inhabited the low bushes, generally in pairs."

Dr. Kirk (Ibis, 1864, p. 324) says it is a very common bird in the open woods and bush country near the Zambesi and other rivers, that the cry is harsh, and that the plumage varies considerably, being much less brilliant during the cold and dry seasons.

Mr. Layard (Ibis, *l. c.*) gives the following note from the pen of Dr. Exton:—"From Sechele's northwards *C. caudata* is commonly known as 'Mosilikatzé's bird,' its liveliness and pugnacity perhaps having given rise to the old warrior's interest in it. In his earlier career Mosilikatzé claimed its feathers solely for royal use and adornment, and in his milder moods has been known to give an ox to the youth who had captured and presented him with one of these birds. It delights to perch on the topmost branch of a leafless tree, from which it gives forth its note of challenge; and should a Crow or Hawk approach, it will make rapid darts at the intruder, and with sharp pecks and harsh screams drive off birds greatly its superior in size and strength. Bechuana name, 'Le Cler-cler;' Matibili, 'Fe-fe.'"

Mr. Ayres says:—"This species, like the preceding one, is found in Natal, and also on the river Limpopo."

In Angola, writes Mr. Monteiro, "it is very common on the coast, but not met with inland beyond twenty or thirty miles. Seen flying about, with irregular flight, all through the day, chattering much, and feeding on *Orthoptera*. One kept five months in captivity subsisted on raw beef. Native name, '*Tacamantaea.*'"

My descriptions are taken from specimens in my collection, obtained by Andersson at Otjimbinque, in Damara Land.

4. Coracias abyssinica.

Rollier d'abyssinie, Buff. Pl. Enl. 626.
Rollier du Sénégal, Buff. Pl. Enl. 326.

Abyssinian Roller, Lath. Gen. Syn. i. pt. 1, p. 408 (1781).

Senegal Roller, Lath. Gen. Syn. i. pt. 1, p. 408 (1781).

Coracias abyssinia, Bodd. Tabl. Pl. Enl. 626 (1823); Schl. Mus. Pays-Bas, *Coraces,* p. 134 (1867); Gray, Hand-l. of B. i. p. 76 (1869).

Coracias abyssinica, Gm. Syst. Nat. i. p. 379 (1788, *ex Buff.*); Lath. Ind. Orn. i. p. 169 (1790); Cuv. Règne Anim. i. p. 401 (1817); Hempr. & Ehrenb. Symb. Phys. sig. z (1828); Swains. B. of W. Afr. ii. p. 105 (1837); Rüpp. Syst. Uebers. p. 23 (1845); Des Murs, Icon. Orn. livr. 5, p. 5 (1846); Lefebvre, Voy. Abyss. Zool. p. 79 (1849); Bonap. Consp. Gen. Av. i. p. 167 (1850); Strickl. P. Z. S. 1850, p. 216; Reich. Handb. *Merop.* p. 46, t. ccccxxxi. fig. 3181 (1851); Hartl. Beitr. Orn. W. Afr. p. 17 (1852); Vierth. Naumm. 1852, p. 35; Scl. Contr. Orn. 1852, p. 124; Hartl. J. f. O. 1853, p. 400; Brehm, J. f. O. 1853, p. 454; Müll. J. f. O. 1855, p. 6; Heugl. Syst. Uebers. p. 17 (1856); Horsf. & Moore, Cat. B. Mus. E. I. Co. ii. p. 571 (1856); Hartl. Orn. Westafr. p. 30 (1857); Cab. & Heine, Mus. Hein. ii. p. 117 (1860); Heugl. Peterm. Mitth. 1861, p. 21; Hartl. J. f. O. 1861, p. 104; Brehm, Reise nach Habesch, p. 210 (1863); Antin. Cat. Ucc. p. 26 (1865); Bocage, Jorn. Acad. Lisb. i. p. 133 (1867); Heugl. J. f. O. 1868, p. 319; Blanf. Geol. & Zool. Abyss. p. 319 (1870); Finsch, Trans. Zool. Soc. vii. p. 220 (1870).

Coracias senegalensis, Gm. Syst. Nat. i. p. 379 (1788, *ex Buff.*); Bonap. Consp. Gen. Av. i. p. 167 (1850); Reich. Handb. *Merop.* p. 47, t. ccccxxxv. fig. 3188 (1851, *ex Pl. Enl.*).

Coracias senegala, Lath. Ind. Orn. i. p. 169 (1790).

Le Rollier à longs brins d'Afrique, Levaill. Ois. de Parad. Roll. &c. p. 75, t. 25 (1806).

Coracias albifrons, Shaw, Gen. Zool. vii. p. 392 (1809).

Galgulus caudatus, Vieill. Nouv. Dict. d'Hist. Nat. xix. p. 433 (1819); Bonn. et Vieill. Enc. Méth. ii. p. 868 (1823).

Coracias caudata, Wagl. (nec Linn.) Syst. Av. *Coracias,* no. 2 (1827); Less. Traité d'Orn. p. 55 (1831); Gray, Gen. of B. i. p. 62 (1845), et Cat. Fiss. Brit. Mus. p. 34 (1848).

Coraciura abyssinica, Bonap. Consp. Vol. Anis. p. 7 (1854).

Coracias habessinica, Heugl. Orn. N. O. Afr. p. 174 (1869).

Adult Male. Forehead and a narrow line extending backwards over the eye, white; head and neck brilliant greenish cobalt, variegated with a little silvery-white marking on the crown, caused by longitudinal tips to the feathers; upper portion of the back and scapulars rich fawn-colour; lower portion of the back, rump, and upper tail-coverts deep ultramarine, the latter faintly tinged with cobalt; least wing-coverts rich ultramarine, the rest of the wing-coverts brilliant greenish cobalt; quills black, both on the upper and underside of the wing, glossed with rich ultramarine, the basal portion of all the feathers brilliant greenish cobalt, blending on the external web of the primaries with the wing-coverts, which are of the same colour; the secondaries externally greenish cobalt, becoming slightly tinged with fawn, those nearest the back being entirely of this colour, and thus blending with the scapulars; tail for the most part brilliant silvery cobalt, the shafts of each feather distinctly marked by a black line, the two middle feathers dull green, rather glossy along the edge of the inner web, and both these feathers are, under certain lights, broadly but indistinctly barred; the two outer tail-feathers are elongated, all the lengthened part being black, slightly glossed with dark blue, and tipped with white; chin, and the feathers on each side of the base of the mandible, white; cheeks, ear-coverts, sides of the neck, and entire under surface white, the throat and upper part of the breast longitudinally streaked with lines of silvery white; bill black; iris raw umber (*Blanford*).

Hab. North-eastern Africa southwards, from 20° N. lat. (*Heuglin*); Southern Arabia (*Heuglin*); Anseba and Lebka rivers (*Blanford*); Kordofan (*Petherick*); Casamanze, Bissao (*Verreaux*); Gaboon (*Aubry Lecomte*); River Gambia (*Mus. R. B. S.*).

Dr. von Heuglin records the following observations in his last work (*l. c.*) :—

"The Abyssinian Roller is a very common resident in Southern Arabia, and in North-east Africa southwards, from 20° N. lat. Along the coast of the Red Sea, between Suakin and Massowa, it is found near the sea-shore. In Abyssinia we found it also pretty high up on the mountains; it frequents the steppes, as well as the wood-region, and the country far from any water or springs. The birds are to be observed mostly in pairs or in families, as much on the dead tops of trees as in bushes. It by no means seldom descends to the ground, or catches insects, especially grasshoppers, in flight. Generally speaking, it is not a shy bird, but is very active, noisy, and quarrelsome with other birds.

"The pairing takes place in the rainy season; then the male may be seen mounting high into the air, shooting straight forward, or twisting about like a snake, spreading out and contracting his tail, uttering quickly all the while the most extraordinary noises. According to Brehm and Vierthaler, it nests in the holes of trees. On the other hand, I have found authentic nests of this Roller on the top of rather bare trees on the steppes. They are like lightly built Magpies' nests. Also Hemprich and Ehrenberg tell us in like manner, 'Ova virent, fragmenta vidi. Nidus in fico sycomoro ut Corvorum nostrorum, laxius sociales, e ramulis aridis facti, minores.' Lefebvre tells us something extraordinary: 'The Blue Roller is called in Tigrē *Ouaddē-guimêle*, which signifies Child of the Cloud, because these birds troop together like clouds in large flocks.' This note must evidently, by an error, be intended for some other species. According to Lefebvre, the edge of the eyelid is vermillion. The southern range of the Abyssinian Blue Roller in our country extends to the other side of the line of the equator."

Mr. Blanford thus writes (*l. c.*) concerning this species, as observed by him during the recent Abyssinian expedition:—

"The habits are precisely similar to those of *C. indica.* It is frequently seen sitting on trees or on bare stems, and thence descending to the ground for insects, or catching them in the air. This bird is not rare locally on the highlands, but by no means generally distributed. I saw it occasionally between Dolo and Antalo, and again rather more commonly about Lake Ashangi (8000 feet above the sea), and in some of the valleys further south, but not on the plateaux. It was very common in the subtropical region of the Anseba and Lebka; and I saw one or two birds, in August, in Sambar, near the coast. It is also found in Southern Arabia, and birds are occasionally seen on the Red Sea."

Mr. Jesse's notes are as follows:—

"Iris brown; legs and feet greenish yellow. Procured on Lake Ashangi by Mr. W. T. Blanford (from whom I received my first specimen), 2nd April, 1868, and at Kokai and Waliko in July. I also observed this bird in the desert, near Amba, in August. Noisy like the other two species; flight peculiar, rolling right and left, the body acting as the pivot. I shot a young bird also in August, without the long tail-feathers, and with the yellow edge to the base of the bill common to birds just fresh from the nest. Plentiful at Kokai and the Anseba."

Mr. Layard (*l. c.*) includes it in the 'Birds of South Africa,' stating:—"I have received this species from one or two places along the northern border of the colony, also from the neighbourhood of Springbok-fontein, in Namaqualand, and from Damara Land. In the colony it is looked upon as a great rarity." I cannot help thinking that my friend Mr. Layard has mistaken the species; for *C. abyssinica* has certainly not fallen under the notice of Mr. Ayres or Mr. Andersson, two good observers, who would not have failed to secure it if it had come within their limits*.

The description of the above bird is taken from a specimen in my collection from the river Gambia, procured, as have been most of my Senegambian birds, from Mr. H. Whitely, of Woolwich. I have described this example, as it is undoubtedly the finest I have ever seen, and is probably an old male in full breeding-plumage. The typical bird from Abyssinia is precisely identical; one in my collection, obtained at Waliko by Mr. W. Jesse on the 29th of July, 1868, is in worn and abraded plumage, having evidently been breeding. It resembles in general coloration the Gambian bird above described; but I notice that even the elongated tail-feathers, and the under surfaces of the rectrices are vermiculated in certain lights.

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* Mr. Layard informs me that he compared his specimens with a bird sent by M. Ed. Verreaux, but is not certain that the South-African birds had the long tail-feathers; so I have little doubt they really were *C. garrula.*

5. CORACIAS CYANOGASTRA.

Le Rollier à ventre bleu, Levaill. Rolliers, pl. 26 (1806).

Coracias cyanogaster, Cuv. Règne Anim. i. p. 401 (1817, *ex Levaill.*); Wagl. Syst. Av. *Coracias,* no. 6 (1827); Less. Traité d'Orn. p. 355 (1831); Jard. & Selby, Ill. of Orn. iii. pl. cxxiii.; Sw. B. of W. Afr. ii. p. 108, pl. xiii. (1837); Gray, Gen. of B. i. p. 62 (1845); id. Cat. Fiss. Brit. Mus. p. 34 (1848); Bonap. Consp. Gen. Av. i. p. 167 (1850); Reich. Handb. *Merop.* p. 48, t. ccccxxxii. figs. 3683–84 (1851); Hartl. Beitr. Orn. Westafr. p. 17 (1852), et J. f. O. 1854, p. 1; Müll. J. f. O. 1855, p. 6; Hartl. Orn. Westafr. p. 30 (1857); Cab. & Heine, Mus. Hein. ii. p. 116 (1860); Hartl. J. f. O. 1861, p. 104; Schl. Mus. Pays-Bas, *Coraces,* p. 136 (1867); Bocage, Jorn. Acad. Lisb. 1867, p. 133; Gray, Hand-l. of B. i. p. 76 (1869).

Galgulus cyanogaster, Vieill. N. Dict. d'Hist. Nat. xxix. p. 436 (1819); Bonn. et Vieill. Enc. Méth. ii. p. 870 (1823).

Coraciura cyanogastra, Bonap. Consp. Vol. Anis. p. 7 (1854).

Head, neck, and entire breast pale fawn-colour, everywhere pervaded with a silvery green lustre, so that the ground-colour is not perceptible; chin, an obsolete eyebrow, and longitudinal stripes on the throat hoary white; upper portion of the back and scapulars deep olive-brown; wing-coverts vivid ultramarine, the least ones (that is to say, those running along the edge of the wing) beautiful silvery cobalt; quills black, glossed above and below with ultramarine, the basal half of the primaries, and also of the outer secondaries, silvery cobalt, forming a conspicuous broad alar bar; innermost secondaries olive-brown, like the scapulars, with which they imperceptibly blend; lower portion of the back, rump, and upper tail-coverts brilliant ultramarine, the latter slightly tinged with a cobalt lustre; tail brilliant cobalt, more especially on the under surface, the shafts black, and the two outer tail-feathers elongated, the ends being black, glossed with blue, all the tail-coverts barred indistinctly in some lights; lower part of the breast, belly, and under tail-coverts deep ultramarine-blue, with a faint cobalt lustre on the latter; thighs also ultramarine, but brilliant cobalt on the inner side of the leg, just above the tarsal joint;

under wing-coverts and axillary plumes brilliant cobalt; bill black.

Hab. W. Africa. Senegambia: Bissao (*Beaudouin*), Casamanze (*Verreaux*), River Gambia (*Mus. R. B. S.*).

In the Lisbon Museum is a specimen of this Roller, said to be from the Cape-Verde Islands; but the best authorities who have written on the ornithology of these islands do not mention the occurrence of a species of *Coracias* there, and without further proof it would be wrong to accept the fact of the present species being met with in this locality on the faith of the single specimen above mentioned. So far as we know, the Blue-bellied Roller is a non-migratory species, limited in its range to the Senegambian district, where, judging from the number of specimens which reach this country, it cannot be very uncommon.

My description is that of a remarkably fine specimen in my collection from the river Gambia.

[To be continued.]

XV.—*Description of an apparently new Bird of the Genus* Eurystomus, *with a List of the known Species.* By D. G. Elliot, F.L.S., F.Z.S., &c.

EURYSTOMUS WAIGIOUENSIS.

E. *similis* E. crassirostri, *sed omnino saturatior; pileo nigricante, dorso viridescente: corpore subtus cyanescente; gutture violaceo longitudinaliter striato: alis extus saturate ultramarinis, basi argenteo-cyaneis: cauda læte ultramarino nitente.*

Head on top and nape blackish brown; back greenish blue; wings ultramarine blue; secondaries prussian-blue; the second, third, fourth, and fifth primaries crossed near the centre with a bluish white bar: throat violet, the centre of the feathers light-blue; underparts light greenish blue: tail black with a blue and purple gloss: bill bright red, black at tip: feet red.

This species appears to be intermediate between *Eurystomus azureus* of Gray, from the island of Batchian, and *E. crassirostris* of Sclater, from the Solomon Islands. It differs from the first named in its much smaller bill, and in the absence on the body of the deep blue which pervades the entire plumage of Mr. Gray's species. From *E. crassirostris,* to which it is more nearly allied, it may at all times be distinguished by its blue wings, and the prevalence of blue upon the back, both of these parts in the Solomon Island species being green. The central tail-feathers of *E. crassirostris* are brown (I describe from Mr. Sclater's type now lying before me), those of *E. waigiouensis* are black with a purple gloss. Mr. Wallace, who procured the type specimen, has others in his collection precisely similar, some of which I have examined; and he informs me that he only procured this Roller in the island of Waigiou, to which it seems restricted. I have therefore deemed the name of *waigiouensis* not an inappropriate one for the species.

I am acquainted with the following species of the genus *Eurystomus.*

1. EURYSTOMUS ORIENTALIS.
Hab. India, Ceylon, Malacca, Lombock, China.

2. EURYSTOMUS PACIFICUS.
Hab. New South Wales, Van Diemen's Land, Aru, New Guinea.

3. EURYSTOMUS AZUREUS.
Hab. Island of Batchian.

4. EURYSTOMUS WAIGIOUENSIS.
Hab. Island of Waigiou.

5. EURYSTOMUS CRASSIROSTRIS.
Hab. Solomon Islands.

6. EURYSTOMUS GLAUCURUS.
Hab. Madagascar.

7. EURYSTOMUS AFER.
Hab. Eastern and Western Africa.

8. EURYSTOMUS GULARIS.
Hab. West Africa.

XVI.—*A List of the Birds of Southern Spain.*
By HOWARD SAUNDERS, F.Z.S.

[Continued from page 68.]

57. CHELIDON URBICA. "Vencejo."

Arrives in February, and begins to nest in March. The Fabrica de Tabacos, at Seville, a huge building, is lined with the nests of this species; but the masses of "perforated mud" on the gate of the Triana were something wonderful. This arch has been demolished since the revolution of September, 1868.

58. HIRUNDO RUSTICA. "Golondrina," Valencian, "Oroneta."

I was informed that the usual date of the appearance of the Swallow at Malaga was 25th January; but I did not actually observe it till 4th February in 1868 (an exceptionally cold year). I found many broods hatched by 16th April in the herdsmen's huts south of Seville. Amongst the tens of thousands of Swallows that have crossed my eye in Andalucia, where they swarm to a degree unknown in England, I never observed one with the faintest approach to that rufous or buffy tinge on the abdomen so noticeable amongst our new arrivals here, a tint which is lost as the season advances, as I have remarked in a pair which breed in my porch at Reigate year after year.

59. COTYLE RUPESTRIS.

Resident throughout the year, frequenting rocks and old ruins, also modern edifices, provided they are perched on the edge of a crag. A colony which frequented a gorge of the Segura, were only to be seen between twelve and one each day. I shot a female, with the breast bare, on the 29th March, but a whole week's observation did not enable me to find their nesting-place.

60. COTYLE RIPARIA.

To my surprise I found this species nesting in the banks of the Guadalquivir in May. I had imagined it was a more northern breeder.

61. MUSCICAPA COLLARIS.

A fine adult male of this species attracted my attention in the Paseo of San Telmo, at Seville, in March 1868. Guirao states that in Murcia it remains throughout the summer, but is not very abundant.

62. MUSCICAPA ATRICAPILLA.

Common in spring, breeding at Aranjuez, and possibly near Granada, and other cool sites.

63. ERYTHROSTERNA PARVA.

Seoane states that a specimen was obtained at San Roque in 1857, which passed into his collection. A friend, who knows the bird thoroughly, informs me that a single bird used to come to his veranda at Utrera each November, remaining till March. He added that it hawked for insects exactly like our common *B. grisola.* Other individuals frequented other gardens and patios; but it did not appear to be a sociable species.

64. BUTALIS GRISOLA. "Papamoscas," "Piñata."

Abundant from spring to autumn, breeding in the intense heat of Malaga, whence I have nest and eggs.

65. LANIUS MERIDIONALIS. "Alcaudon real."

Generally distributed, ranging as far north as Aragon; but, owing to its shy nature, it appears rarer than it really is. I have found its nests in much the same places as the Missel Thrush would have chosen, about halfway out on a bough of some tree whose name I forget, though its thorny character is fresh in my memory. One I found, and from which I had seen the bird fly off, was so immediately over my track that, pulling up my horse, I proceeded to inspect its contents, standing up on the saddle; unfortunately, the horse moved on before I was ready, and I was left like Absalom.

I never observed *Lanius excubitor* in any part of Spain, nor do I recollect a specimen in any local collection. Guirao does not give it in his list; and although it may be of occasional occurrence on the east coast, I have no positive proof that such is the case.

66. LANIUS MINOR.

This species occurs in the east of Spain; but Guirao considers it very rare even there. Lord Lilford informs me that he *once* observed it in Andalucia; but I have never had similar good fortune, nor amongst hundreds of eggs of *L. auriculatus* which have been brought to me were any which could be attributed to it on suspicion.

Lanius collurio may also occur; but I never obtained it, and Guirao omits it from his list.

67. LANIUS AURICULATUS. "Alcaudon."

Arrives at the beginning of April, and is everywhere abundant, its nests being a perfect nuisance. Even on the mud flats, right out on the beach, at the mouth of the Ebro, where there is scarcely a bush five feet high, I found this ubiquitous Shrike flitting from spray to spray.

68. LANIUS NUBICUS.

I recognized this bird in Spain in May, 1863, on the prickly-pear hedge near the neutral ground at Gibraltar. It puzzled me at first by its thoroughly Shrike-like habits, though uttering at the same time a feeble but not unpleasing song. I watched it with a powerful binocular for about half an hour, and noted down its coloration &c. on the spot.

Telephonus tschagra, assigned to Spain, I never met with, dead or alive. It is not found in any list, and Lopez-Seoane laughs at Temminck and Degland on the subject.

69. REGULUS CRISTATUS.

A regular winter resident, and may possibly be found throughout the year about the higher wooded districts. I have observed it near Granada in March, and in the Pine-woods on the coast in February.

70. REGULUS IGNICAPILLUS.

The only place where I have seen specimens is the island of Majorca, where I was informed that it was not uncommon.

71. ÆGITHALUS PENDULINUS.

I never found this species in the marshes of Andalucia; but it is found near Valencia, breeding in the Albufera and at Sueca.

72. PANURUS BARBATUS.

Observed in the Albufera of Valencia in May, 1870.

73. ACREDULA CAUDATA.

I noticed this species at Aranjuez in May; and it is found in Andalucia in winter.

74. PARUS CÆRULEUS.

Tolerably abundant. I did not identify *Parus ultramarinus* of North Africa, but think it not impossible that it may sometimes occur.

75. PARUS MAJOR. "Carbonero," "Cerrajillo."

Resident, and the most numerous of the family. Specimens from Andalucia are somewhat smaller and brighter in colour than the average specimens from more northern Europe.

76. PARUS ATER, } "Herrerillo."
77. PARUS PALUSTRIS, }

Both these species were found near Granada and Cordova in spring.

78. SITTA CÆSIA.

A very local species, Granada, where it was common enough, being the only place where it came under my notice.

79. SITTA SYRIACA.

When searching for the breeding-place of *Cotyle rupestris* near Archena, I saw both this bird and its unmistakable nest; but it was perfectly impossible to get near its haunts with a gun, and it would not come down to me. With great difficulty, and after a most agonizing climb over the sharpest of rocks, I got within a few yards of the nest; but there was a chasm between me and the desired prize, which nothing without wings could cross.

80. TICHODROMA MURARIA.

Found in Sierra Nevada, and probably in some other ranges.

81. CERTHIA FAMILIARIS. "Trepatroncos," "Arañero."

Resident at Granada, and, indeed, wherever there is any old timber.

82. TROGLODYTES PARVULUS. "Ratilla."

Not uncommon in the wooded hills, but I never discovered its nest.

83. CINCLUS AQUATICUS.

Frequents the higher mountain-streams, but is nowhere numerous. My specimens from the Sierra Nevada appear to be of the ordinary type; but two I have received from Santander, in Asturias, are *C. melanogaster*, which is, I believe, also found in the Pyrenees.

A word with regard to what should be the next in my list, *Ixos obscurus*. There is no bird I have tried harder to obtain, taking out an Algerian specimen, and showing it to all my friends in Spain, but without result. Certainly Lopez-Seoane says that *one* specimen was obtained at Jesus del Valle, near Granada, in June 1858; but it is not in the museum there, nor in any other collection in Spain, so far as I am aware. This Bulbul, if it ever abounded in Spain, as French naturalists would have us believe, must have followed the Moors out of the country; and there is a certain mournful fitness in the "last of the Bulbuls" expiring so near to the "last sigh of the Moor," a site with which all visitors to Granada must be acquainted.

84. TURDUS MERULA. "Mirlo."

Very abundant, and resident throughout the year. The eggs are much brighter in colour than the majority of British specimens.

85. TURDUS TORQUATUS. "Chirlo."

Observed in the Sierra Nevada, where it undoubtedly breeds, descending to the low country in autumn and winter in flocks. However, I have lately received nest and eggs from Colmenar.

86. TURDUS MUSICUS. "Zorzal."

Very abundant in winter, but retires northward in March.

87. TURDUS VISCIVORUS. "Charla."

Far less numerous than the preceding, but breeds in the hills.

88. TURDUS PILARIS.

This species certainly does occur in winter in the south-east of Spain; but in the country round Málaga and Seville I never met with it; and although I have examined bunches of Thrushes, and Blackbirds without number, in the markets during my search for *Ixos obscurus,* yet I never found a single Fieldfare.

89. TURDUS ILIACUS. "Malvis."

Unlike the Fieldfare, the Redwing is almost as abundant in winter as the common Thrush.

90. PETROCINCLA CYANEA. "Solitario."

Generally distributed throughout the country. No matter how wild the locality, the Blue Rock-thrush will always be your companion; and though very shy during the breeding-season, it is by no means so at other times, and I could often have shot specimens. But this I could never bring myself to do; and it would appear that the Blue Rock-thrush exercises some influence over the usually unimpressionable natives; for I never saw one amongst the bunches of Thrushes &c. either in Spain or Italy. The eggs are difficult to obtain, both from the situation of the nest and from the habit this bird has of making several nests before finally deciding which it means to occupy. The young are prized for the cage, but not to the same extent as in Italy, Malta, and Greece, where fabulous prices are sometimes given for a good songster.

91. PETROCINCLA SAXATILIS.

In the south I have only observed this species in the Sierra Nevada, where it is abundant. It frequents much higher ground than the preceding, which species it replaces in Aragon. I found a nest in that province, in May, in the side of a gorge, on either hand of which were vineyards.

92. RUTICILLA PHŒNICURA.

Occurs at Granada in spring, and probably breeds there.

93. RUTICILLA TITHYS. "Colirojo."

Abundant everywhere, frequenting the towns and villages in autumn and winter, but nesting, so far as my own experience goes, principally in the hills and broken ground.

94. CYANECULA SUECICA. "Gargantiazul."

Occurs in the spring and autumn migrations. I have specimens both with the white patch and with the red patch on the throat; but in the series in the Málaga museum is the finest specimen I ever saw killed in *summer*, without any spot at all—the throat and breast being of the richest ultramarine, darkening at the lower edge, followed by deep chestnut.

95. Erithacus rubecula. "Gargantirojo," "Pechi-rubio."
Common in autumn and winter. I was informed at Granada that it retired to the high ground to breed; but I never had its eggs brought to me.

96. Saxicola œnanthe.
A regular visitor in autumn and spring.

97. Saxicola aurita. "Ruiblanca."
I obtained nest and parent birds at Málaga; but I do not consider it so abundant in the south as the following species, which, again, it greatly outnumbers in Aragon. The nest usually contains more hair, and is altogether a far neater structure, than that of its congener

98. Saxicola stapazina. "Ruiblanca," "Cagachin."
Arrives in March, and is generally distributed throughout rugged ground. The remains of the Roman amphitheatre at Italica, near Seville, always contain a nest or two. The eggs, usually five in number, are, as a rule, a trifle smaller than those of the preceding species, but otherwise undistinguishable from them.

99. Dromolæa leucura. "Ruiblanco," "Culiblanco."
Abundant in rocky places, arriving earlier than the two preceding species, and breeding in April. Its eggs, of the palest blue or sea-green, distinctly zoned with reddish spots, are, when fresh, the most beautiful of the family.

100. Pratincola rubicola. "Cagarropes."
Abundant throughout the year, and, in spite of the intense heat, it remains in the plains to breed.

101. Pratincola rubetra.
Is a migrant, and by no means numerous at any time.

102. ACCENTOR ALPINUS. "Serrano."

I observed the Alpine Accentor in the Sierra Nevada; and a friend who this year ascended the Picacho de la Veleta, found it extremely abundant there. Mr. J. H. Gurney, jun., informs me that he saw one clinging to the masonry outside the signal-station at Gibraltar in December.

103. ACCENTOR MODULARIS.

Tolerably common in winter. As I never had an egg brought to me which resembled that of this bird, I conclude it goes north to breed.

104. SYLVIA HORTENSIS, and

105. SYLVIA ATRICAPILLA.

Occur in the autumn and spring passage; the latter species, being the more abundant, probably breeds in the higher region.

106. SYLVIA ORPHEA.

Abundant in spring, breeding in May. About three nests out of five contain one egg almost as large as that of the Wood-chat, and also one rather smaller than the average.

107. SYLVIA CINEREA.

Occurs in winter; and some remain to breed; but the majority retire to cooler latitudes.

108. SYLVIA CURRUCA.

Abundant in winter and early spring, but does not remain to breed.

109. SYLVIA CONSPICILLATA.

Abundant in spring, and breeds at Gibraltar and many other places, preferring gardens and scrub-covered ground to olive-plantations or vineyards. I also found it on the mud flats at the mouth of the Ebro.

110. SYLVIA SUBALPINA

I observed on the scrub-covered hills near Murcia, but not elsewhere; it is, however, an unostentatious bird, and may easily escape notice.

111. MELIZOPHILUS PROVINCIALIS

I obtained at the same time and place as the last species, and often heard its familiar "Pit-it-it-chou," close to the city of Murcia, the gardens and orchards of which it frequents in winter.

112. MELIZOPHILUS SARDUS.

I only once observed this species, for which I had long been on the look-out; and that was near Palma, the capital of Majorca. I had been working the partially drained marsh of El Prat, and was sitting down at the edge of a belt of Pines intermixed with Cistus-scrub, when I heard a note resembling that of a diminutive Dartford Warbler, which proceeded from a small greyish bird a few yards from me. It soon came more fully into view, and for some minutes I watched its movements, which were similar to those of its congener, both with my glass and with the naked eye; then, having fully identified my species, I drew back to such a distance as not to blow my small friend to pieces, and raised my walking-stick gun. This time, of all times, it missed fire, and the startled bird plunged into a thicket, from which I could never dislodge or trace it. At the island of Dragonera, where von Homeyer observed it, I was not equally fortunate.

113. PHYLLOPNEUSTE SIBILATRIX,
114. PHYLLOPNEUSTE TROCHILUS,
115. PHYLLOPNEUSTE RUFA.

Observed in autumn and winter in Andalucia; but none remain to breed.

116. PHYLLOPNEUSTE BONELLI.

Appears in spring and remains throughout the summer.

117. FICEDULA POLYGLOTTA. "Carisalero."

Very abundant, nesting throughout the country. I have not been able to identify more than this species, but am strongly inclined to think that *F. icterina* is also found near Málaga.

118. CHLOROPETA OLIVETORUM.

There is an undoubted specimen in the museum at Valencia, on the strength of which I insert this species; but from other evidence I have no doubt that it breeds abundantly near Málaga.

119. CHLOROPETA ELAICA
I obtained, with many nests. It is highly probable that *C. cinerascens* (*pallida*) may also occur near Málaga.

120. CISTICOLA SCHŒNICOLA. "Bolsicon," "Tin-tin."
Common and one of the best-known Warblers. It owes its first name to the curious purse-shaped form of its nest, and its second to its sharp note. From its short rapid flitting it is also called "Chispita," *i. e.* "little spark." The variation in the eggs of this bird is remarkable. Of those from four nests now before me, one is a dull shiny white, like that of a miniature *R. tithys*, another palish-blue, like that of *Muscicapa luctuosa*; a third only differs from that of *Certhia familiaris* in having a somewhat bluish ground; and a fourth is of a lovely blue abundantly blotched with purple. I have never known them to vary in the same nest, though I have been told they sometimes do so, and also that a pink variety is occasionally found.

121. AEDON GALACTODES. "Alzacola," "Alzarabo."
From its custom of continually opening and raising its tail—also "Colirojo" and "Colirubio," from its colour. Abundant in spring and summer, breeding in the vineyards, frequently between the leaves of the Cactus, of which the hedges are composed.

122. BRADYPTERUS CETTII.
Not uncommon, to judge from the number of nests brought in; but, from the shy habits of the bird, I have but rarely obtained it.

123. LUSCINIOLA MELANOPOGON.
The only specimen I ever examined in Spain is in the museum at Valencia; my search for it at the Albufera and other places was unavailing.

124. CALAMODYTA SCHŒNOBÆNUS.
Observed in winter on the banks of the Guadaljorce near Málaga; but it does not breed there.

125. CALAMODYTA AQUATICA.
This species, with nest and eggs, has been sent to me from the same locality as the last.

126. PARNOPIA LOCUSTELLA.

Is occasionally to be seen, and frequently to be heard, in the palmetto and other scrub near Málaga. It remains throughout the winter.

127. PSEUDOLUSCINIA LUSCINIOIDES.

I once recognized this species in the marshes of the Guadalquivir in April, but was unable to discover its nest in any part of Spain, though it doubtless breeds.

128. CALAMOHERPE ARUNDINACEA.

I have obtained this species both in winter and spring; and eggs have been sent to me from Málaga which I can attribute to no other species.

129. CALAMOHERPE PALUSTRIS.

I shot one of a pair, which evidently intended to nest, in the marshy bottoms of the Tagus, near Aranjuez, in May 1870.

130. CALAMOHERPE TURDOIDES. "Carrisalero."

Abundant in every reed-bed, where it breeds.

131. MOTACILLA ALBA. "Lavandera," "Pispita."

Very abundant in autumn and winter. On the 2nd of March the newly turned furrows around Seville were absolutely piebald with them; but in April not one was to be seen, they having retired northward to breed.

132. MOTACILLA YARRELLI.

On the 3rd of March, 1868, I found a very dark male of this species in the Seville market; and although in a somewhat decomposed state, I managed to make it into a tolerable skin. This is the only occasion on which I observed it.

133. MOTACILLA BOARULA. "Pispita."

Was often observed at Málaga in winter; and in the Sierra Nevada and other ranges it is abundant along the mountain-torrents.

134. BUDYTES FLAVUS. "Pispita amarilla."

Abundant. I obtained several nests with parent birds in the Seville and Málaga districts. It appears to belong to the variety *cinereocapilla* of Savi.

135. ANTHUS AQUATICUS.

I obtained this species in winter at Málaga, and in the mud flats near Cadiz; but it was not numerous.

136. ANTHUS PRATENSIS.

Common in winter.

137. ANTHUS ARBOREUS.

Generally distributed from autumn to spring. I fancy some breed on the high plateaux.

These three species are generally known as "Cinceta."

138. AGRODROMAS CAMPESTRIS.

I never observed this species in the fertile and well-watered country round Seville; but on the higher tablelands, especially in the more arid districts of the provinces of Murcia and La Mancha it is very abundant and breeds. As Mr. Salvin remarks in 'The Ibis' 1859, p. 310, its eggs are absolutely undistinguishable from those of *Aedon galactodes,* and unidentified specimens ascribed to either of these species are utterly valueless.

All the above-named Warblers, where not distinguished by any special name, are called indifferently "Pinchahigos," "Moscarétes," "Papamoscas," and "Pinzoletas;" those with black heads being sometimes distinguished as "Carboneros," a name also given to several of the *Paridæ,* and in Murcia to the Goldfinch.

139. AGRODROMAS RICHARDI.

I possess two fine examples, which were obtained near Málaga on the 2nd of February. In some winters the species is not uncommon.

140. ALAUDA ARVENSIS. "Zurriaga."

Very abundant in winter in large flocks, but leaves Andalucia in March. It breeds, however, in Aragon, where its well-known song struck upon my ear when hunting for the breeding-place of the Flamingos last year.

141. ALAUDA ARBOREA.

Tolerably common in autumn and winter, some few breeding near Granada.

142. **Galerita cristata.** "Cujada."

Found throughout the year, but more abundant in the spring. I can see nothing in the Crested Lark of Spain, to which Brehm has given the name of *G. theclæ*, to distinguish it from specimens in my collection from France and Italy.

143. **Melanocorypha calandra.** "Alondra," "Calandria."

Abundant in the great plains south of Seville, where it breeds, making its nest in a depression of the ground, often at the depth of three or four inches. The eggs, though small for the size of the bird, are, however, very distinct from those of *G. cristata.* In the Isla Menor, a great place for Bustards, the Calandra is especially abundant.

144. **Calandrella brachydactyla.** "Terrera," "Tererilla."

This, like the preceding species, is abundant in the plains, where it makes its nest at the side of a small tuft or bush. The eggs vary greatly, one clutch, from which I shot the bird, are scarcely larger than, and might easily be mistaken for, those of *Sylvia curruca*, whilst another clutch, taken within a hundred yards, are of a uniform rich tawny colour.

145. **Emberiza miliaria.** "Triguero."

Is, I think, the most abundant bird in Andalucia, the number brought into the markets equalling that of all the Larks, Sparrows, and Thrushes, put together. It remains to breed.

146. **Emberiza citrinella.**

Sometimes occurs in winter.

147. **Emberiza cirlus,** 148. **Emberiza hortulana.**	Tolerably abundant, breeding throughout the country.

149. **Emberiza cia.**

Common among the vineyards on the hill-sides, where it breeds. All these smaller Buntings are known as "*Ave-tontas.*"

150. **Emberiza schœniclus.**

Tolerably abundant in suitable localities. It was evidently breeding at the Albufera of Valencia in May.

151. Emberiza pyrrhuloides.

This species, which differs from the foregoing in its size, its stronger bill, and especially in its note, is found in the east of Spain, and there are specimens in the museum of Valencia. In November 1867 I observed several birds of this species from a short distance; but perched as they were on the reeds of the Segura, then a swollen flood, it would have been useless to shoot at them. Had I not watched them, I should certainly have attributed their hoarse note to the frogs which swarm in the neighbouring "acequias."

152. Passer montanus.

I only observed this bird in one locality, namely in some Alders on the banks of the Segura. Amongst the numbers of *P. domesticus* brought into the markets, it presence was never detected.

153. Passer domesticus. "Gorrion."

The common Sparrow of the country, breeding in similar localities to those adopted by our own familiar bird.

P. cisalpinus is said to occur in Majorca; but among those obtained during my stay there were nothing but *P. domesticus*.

154. Passer salicicolus. "Gorrion-moruno."

Abundant in the country, far away from any habitations, nesting in the foundations of Eagles' and Kites' nests, and also making distinct nests on branches of pines, of much finer and neater workmanship than that of the preceding species. It is occasionally to be found in the markets, in considerable abundance when some peasant has made a raid upon their haunts; but weeks may elapse before another specimen makes its appearance, its usual haunts being far from those frequented by the bird-catchers.

155. Pyrgita petronia. "Gorrion-montés."

A very local species, but not rare. It breeds in ruins, old walls, wells, and similar places; but I never was able to obtain the nest myself; one was brought to me from a well-known locality, which lay too far out of the track for my personal inspection.

156. Chionospina nivalis.

This species is certainly found in the Sierra Nevada, but, so far as I am aware, in no other locality. A botanist whose researches had caused him to pass many months in that range, assured me that near the snow-line it is abundant.

157. Fringilla cœlebs. "Pinzon."

Abundant in winter; but I never could find its nest in spring.

158. Fringilla montifringilla. "Montañes."

In very hard winters, such as that of January 1868, Bramblings are frequently brought into the market.

159. Ligurinus chloris. "Verdon," and "Verderon."

Abundant in winter.

160. Ligurinus chloroticus.

I have compared specimens of this species obtained in Andalucia with those collected by Dr. Tristram in Palestine (*cf.* Ibis, 1868, p. 206); and finding that they correspond in every respect, I follow Dr. Tristram in applying Lichtenstein's name to the bird. It differs from the common Greenfinch in its much smaller size, and in having the head and underparts of a more brilliant yellow[*]. It arrives in March, and remains to breed.

161. Chrysomitris citrinella. "Verdoncillo."

Common on the coast, amongst the orchards, in winter, retiring to the hills to breed. I took a nest with three eggs in the precincts of the Alhambra, on the 4th of April 1869.

162. Linota cannabina. "Camacho."

Abundant in winter.

163. Linota montium.

I obtained one specimen at Murcia in November, but do not think it can be abundant, as I never recognized it again.

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[*] [This species appears to have been first described by Bonaparte Consp. i. p. 514, as *Chlorospiza chlorotica*, Licht. ex Ehrenb., with the following brief diagnosis:—*Similis* præcedenti (i. e. *C. chloris*); *valde minor; pileo pectoreque flavis*: ex. As. occ. Mus. Berol. et Paris. See also Cab. Mus. Hein. i. p. 158.—Ed.]

164. Carduelis elegans. "Gilguero," "Colorin."

Abundant and resident. One nest, obtained at San Juan de Azualfarache, opposite Seville, was situated at the extreme point of an enormous Cypress, a very unusual height for the nest of such a bird.

165. Chrysomitris spinus. "Lúbano."

Of very uncertain occurrence in winter.

166. Serinus hortulanus. "Chamariz."

Abundant and resident throughout the year. The nest, smaller than that of the Goldfinch, is placed in low hedges, and bushes about breast high. When in flocks, though tame, they are of very restless habits, and, rarely remaining two minutes in the same tree, keep up a perpetual, though not unharmonious twitter.

167. Loxia curvirostra. "Pico-tuerto." In Majorca, "Trenca-piñons."

On the mainland the Cross-bill seems principally confined to the forests of Segura, but in Majorca it is tolerably abundant. I have carefully compared specimens from that island with a large series from other parts of Europe, and cannot find any difference either in shape of bill or length of wing to justify von Homeyer in considering the Balearic bird a permanent variety; on the contrary the bill is not larger than that of average specimens, nor is the grey colour upon which he lays stress a constant characteristic.—*Vide* 'Journal für Ornithologie,' 1864, p. 323.

168. Coccothraustes vulgaris. "Piñonero," "Cascanueces."

Common on the coast in winter, but retires to the higher ground to breed.

169. Sturnus vulgaris. "Estornino."

Appears in September, and migrates northward in spring, not one then remaining in the environs of Seville.

170. Sturnus unicolor. "Tordo."

Takes the place of the preceding species in spring and summer, breeding in similar localities, though evincing a greater preference for holes of trees. Its flight is wonderfully rapid;

and the light-keeper at the Dragonera informed me that, though he had picked up scores of Starlings and other birds merely stunned by dashing against the lantern at night, he had never found a "Tordo" whose cranium was not absolutely smashed. The eggs exactly resemble those of the former species.

171. PASTOR ROSEUS.

A rare visitant, though it has several times occurred on the east coast, and once near Seville.

172. ORIOLUS GALBULA. "Oropendola."

Abundant in spring and summer, resorting in Andalucia to the thickest pine-woods for shelter from the sun, whence it appears rarer than it really is. I found one nest, which the natives considered the very "blue riband" of birds-nesting, and were quite surprised at my want of enthusiasm.

173. PYRRHOCORAX GRACULUS. "Graja."

Abundant in the mountain-districts, especially at the back of the Sierra Nevada, where it appeared to be more numerous than the following species.

174. PYRRHOCORAX ALPINUS. "Graja," "Cucala."

Also found in similar localities as the last, frequenting, however, higher ground. I obtained specimens of both species.

175. CORVUS MONEDULA.

I found this a very local species. Though abundant in the Cotos, where it breeds in hollow trees, I never saw it again till 1869, when I noticed a pair near Aranjuez; and pointing them out to Agapito, Lord Lilford's former assistant, he remarked that he did not know the bird at all.

176. CORVUS CORAX. "Cuervo," "Grajo."

Abundant and resident throughout the country, breeding in rocks or on trees indiscriminately. In Majorca this species, elsewhere so wary, is as tame as our Rooks are with ploughmen, and may be seen stalking about in pairs after the peasants who are working in the olive-plantations.

177. CORVUS CORONE. "Grajillo."

Tolerably abundant, and resident throughout the year.

178. **Corvus cornix.**

Of rare occurrence; I have only seen two specimens.

179. **Corvus frugilegus.**

An occasional autumn visitant, especially after rains.

180. **Pica melanoleuca.** "Marica," "Urraca."

Abundant in the wooded districts, especially in the Cotos, and near Aranjuez, but very local. Its nests, the favourite resort of *Oxylophus glandarius*, are almost as often placed in bushes as in high trees.

181. **Cyanopica cooki.** "Mohino," "Rabilargo."

Though local, is extremely abundant in the wooded districts, becoming rare in such cultivated portions, to the east, as Valencia and Murcia. It breeds in small colonies, making a nest somewhat like that of a Jay. I once found seven eggs in one nest; but the usual number is five or six. So far as I am aware, the Great Spotted Cuckoo never selects the nest of this bird for her eggs.

182. **Nucifraga caryocatactes.**

I am induced to give this bird a place by the following remarks kindly forwarded to me by Lord Lilford. "Major Irby saw one at Cordova, said to have been killed there; and it is mentioned by Captain Cooke Widdrington as observed in Estremadura. Not common, but well known in Aragon." Captain Cooke Widdrington noticed one pair, which were very wild, near Espiritu Santo, not far from Almaden, which brings them within my limits. I never saw the bird myself, though Lopez-Seoane mentions it as "*rare* in the Pine-woods of the Sierra Nevada in May."

183. **Garrulus glandarius.** "Arrandajo," "Cabezon."

Abundant in all wooded districts, except those south of Seville, where I never met with it. Near Granada and further north it breeds plentifully.

184. **Columba palumbus.** "Paloma-torcaz."

Swarms in winter, a tolerable number remaining throughout the year.

185. Columba livia. "Paloma brava."

Abundant on the rocky east coast and in all mountain-ranges, this species swarms to an almost incredible extent in the mountains at the back of the Sierra Nevada. When winding through the dreary ravines between Baza and Lorca, vast flocks kept pouring down to their feeding-grounds from sunrise to about 8 A.M.; and we estimated the number which passed quite near to us as about seven thousand, without noticing more distant bands. Each flock was *invariably* led by a white or piebald bird.

186. Columba turtur. "Tortola."

Abounds throughout the country from April to September.

187. Pterocles arenarius. "Ortega," "Churra," and, near Seville, "Corteza."

This species is found on the coast in winter, but during the rest of the year prefers higher and more arid localities than the following species, which it almost replaces in La Mancha.

188. Pterocles alchata. "Ganga."

Abundant in Andalucia, where it breeds in May, making no nest, but depositing three eggs in a slight hollow scratched in the soil. Its flesh is very dry; but I must say that the preceding species when killed in winter is not by any means bad eating.

I never saw a specimen of *Syrrhaptes paradoxus* in any part of Spain; but I may mention incidentally that there is a fine adult bird in the museum of Perpignan, just over the border, obtained 18th October 1859.

189. Caccabis petrosa.

Is only found on the Rock of Gibraltar, where it breeds; probably introduced. One specimen is in the Murcia museum, and Dr. Angel Guirao informed me that this species, now almost extinct in that province, was formerly not uncommon.

190. Caccabis rufa. "Perdiz."

Common everywhere. *Caccabis saxatilis* I never found in any part of Spain.

191. Perdix cinerea.

Almost unknown south of the Sierra Morena and, I might say, south of the Guadarrama range. One specimen is in the Murcia collection.

The space that should be occupied by the Francolin (*Francolinus vulgaris*) is vacant. Dr. Angel Guirao assured me that it was formerly found near Murcia; and Lord Lilford reminds me of the specimen in the Valencia museum; but at present "it is not." For further particulars I refer my readers to 'The Ibis' for 1862, p. 352.

192. COTURNIX COMMUNIS. "Codorniz."

Some Quails remain throughout the winter; but the greater number arrive in April, and remain to breed all over the country. Torremolinos, near Malaga, is a noted Quail-ground.

193. TURNIX SYLVATICA. "Torillo."

Abundant near Algesiras, and not uncommon near Málaga in April; but elsewhere I fancy it is rare. In spite of all my efforts I have never been able to procure its eggs in Spain, though a nest containing two was found near Gibraltar; but the finder having left it in the hope of obtaining more, could not discover the place again. He knew the egg well, being a friend of the late M. Favier, of Tangier. Lord Lilford informs me that "a clutch of four eggs was taken near Gibraltar in June or July 1869, and brought to Major Irby. It especially affects the Palmetto scrub."

194. CREX PRATENSIS. "Guion de Codornices;" Valencian, "Gualamaresa."

A regular visitant, but does not breed.

195. PORZANA MARUETTA.

Abundant in winter, but I have no proof of its remaining to breed.

196. PORZANA PUSILLA.

Not uncommon, certainly breeding near Seville.

197. PORZANA BAILLONI.

Also breeds near Seville, where Lord Lilford obtained the eggs. According to my own observation, it is rather a rarer species than the last. These three are known generally as "Pollos de Agua."

198. Rallus aquaticus. "Rascon."

Common, and breeds plentifully in the marshes near Seville.

199. Gallinula chloropus. "Polla de agua."

Resident, nesting in the marshes near Seville, whence I obtained eggs.

200. Fulica atra. "Mancon;" in Valencia, "Focha."

Breeds plentifully in the "marisma," and frequents the Albufera of Valencia in vast numbers in winter. I did not observe it breeding there in May.

201. Fulica cristata.

In Valencia the Crested Coot appears in winter.

In Andalucia the natives do not seem to distinguish it; but it breeds in the "marisma," notably near Madre del Rocio, where I saw it, and obtained identified eggs.

202. Porphyrio hyacinthinus. "Calamon," "Gallo azul," in Andalucia; "Gallo de Cañar," in the province of Valencia.

This fine species, though still tolerably abundant in the marshes of the Guadalquivir, is almost, if not quite, extinct in those of Valencia, where it was formerly very numerous; in the marshes of the island of Majorca its numbers are also sadly diminished. From my own experience, and from clutches of eggs received, the complement appears to be three, which are laid in April. Cavaliere Luigi Benoit, of Messina, assured me that M. Malherbe was quite in error in stating in his 'Faune de Sicile' that it deposited its eggs in February.

[To be continued.]

XVII.—*Notes on South-African Ornithology.*

By E. L. Layard, F.Z.S.

In the last number of 'The Ibis' I had the pleasure of publishing an interesting letter from my friend Dr. Exton, on the habits of *Schizorhis concolor*. During the journey on which these observations were made, Dr. Exton procured a small but very interesting collection of birds, containing several very rare species; and one, which seems quite new to science, I propose to name, in commemoration of its discoverer,

Barbatula extoni, nobis (Exton's Yellow Barbet).

Upper parts greyish-black, verging to pure black on the head; mottled with greenish-white spots, smallest and roundest on the back of the head and neck, larger and more elongated on the back; rump greenish yellow; lesser wing-coverts and primaries on the outer edge bordered with orange-yellow; tail-feathers narrowly edged with dirty white; a brilliant orange patch occupies the anterior portion of the vertex, separated from the bill by a broadish black bar, coalescing with the pure black of the head, and succeeded by a narrow white bar, which covers the nostrils and passes backward under the eye; two short white bars proceed from the edges of this suborbital streak, and are divided by black bars from each other and from the greenish-yellow of the throat and chin; eyebrow small and white. All the underparts dirty pale ashy, more or less tinged with green or greenish yellow. Length 4″ 6‴, wing 2″ 7‴, tail 1″ 3‴, tarsus 6‴.

The nearest ally to this pretty little species is *B. chrysocoma*, from which it differs in the pure black of the head, the rounder shape and fewer number of the greenish-white markings on the upper parts, the greater breadth of the black bar of the forehead, the less vivid orange of the wing-feathers, and in the dull colour of the underparts (which in *B. chrysocoma* are bright chrome-yellow), and notably in its larger size.

In his notes, Dr. Exton writes that he obtained this bird near Kanye, a native town in the Bechuana country (lat. 24° 50′ S., long. 25° 40′ E.), midway between the Marico and the Kalahari desert, and that the stomachs of the only three specimens procured contained the fruit of a species of mistletoe.

In the same region he shot *Laimodon nigrithorax* (Cuv.), *L. leucomelas* (Bodd.), and *Capito vaillanti* (Ranz.). Of the latter he writes that "the note of this bird is a continuous trill, somewhat resembling the quick 'tap-tap-tap' of *Dendrobates* when at work on a decayed tree. I obtained three specimens by following the sound from tree to tree. When calling, they usually perched on the uppermost twig of a tree; and their peculiar jerk of the body whilst producing the sound could then be readily distinguished. The female has the same note as the male. The bill (in the living specimen) is greenish-yellow, tipped with black; the iris reddish-brown. The gizzard contained some berries and shreds of leaves; that of one female contained only shreds of leaves" *.

Dendrobates namaquus (Licht.), *D. brucii*, Malh., and *Campethera bennetti*, A. Smith, were also procured in the same region. *D. brucii* presents some differences from specimens killed in Damaraland, the markings on the breast and underparts being bolder and more elongated; it may be called a local race, if not elevated into a species. In the latter case, I would suggest for it the name of *D. striatus*, as pointing out the striated character of its distinctive marking.

Among Raptorial birds Dr. Exton was fortunate enough to obtain a very fine male of *Erythropus amurensis* in the Matabili country, and a beautiful example of *Aquila desmursi*, Hartl., in the stage of plumage represented by the left-hand figure in plate 77 of the 'Transactions of the Zoological Society,' vol. iv.

This beautiful and rare Eagle was obtained at Kuruman, thus coming within my South-African limits; and I record its addition to our fauna with sincere satisfaction.

Taking advantage of the presence in London of the veteran South-African naturalist M. J. Verreaux, of Mr. J. H. Gurney, whose experience in South-east and South-west African forms, consequent on his study of the collections of Mr. Ayres and the late Mr. J. C. Anderson has been very great, and of the Rev. Canon Tristram, who, as all readers of 'The Ibis' well know, has collected largely in North Africa, and is well up in Larks and Chats, Mr. R. B. Sharpe and myself have submitted to their united inspection fine series of several obscure and doubtful birds, selected from the extensive and rapidly increasing collection of Mr. Sharpe, supplemented by fresh specimens brought home by myself. The result has been the clearing up of much doubtful synonymy, and the fusing into one of several species hitherto deemed distinct. The observations of M. Verreaux, which accord precisely with my own arrived at independently, show that, with regard to South-African species, the nearer you approach the equator the brighter and smaller they become; as you approach the southern or colder limit, larger and more robust forms appear, clothed in duller colours. Birds, therefore, at the opposite ends of the chain, were it not for the intervening links, would be (and have been) separated into distinct species. In some places, however, owing perhaps to partial migrations, small and large races mingle. Again, on the sandy grey soil of certain parts, several species, especially among the Larks and Tit-larks, assume a *grey phase* of colouring, while on the red Karroo soils a *rufous* tint prevails in the same birds; this has likewise led to the manufacture of new species.

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* *Quopopo*, the hideous name adopted by Sir A. Smith, is the general Bechuana name for the Woodpeckers—the word meaning literally *Woodpecker*.

Another fact has been arrived at by the comparison of M. Verreaux's observations with my own. Species which in his time (1818–40) were common and abundant, even in the neighbourhood of Cape Town, both of sea-fowl and land-birds, have now entirely disappeared, or become very scarce, and have been replaced by others heretofore unknown in the locality.

In illustration of what I have previously stated, I may mention that we have proved most conclusively that *Telephonus trivirgatus*, Smith (Zool. S. Afr. pl. 94), is only the small tropical race of *T. erythropterus*, Shaw, which = *T. cucullatus*, Temm., the southern and northern (Algerine) races being perfectly identical!

Again, *Anthus cinnamomeus*, Rüpp. Neue Wirb. p. 103, *A. sordidus*, Rüpp., *l. c.*, t. 39. f. 1, *A. gouldi*, Fraser, P. Z. S., 1843, p. 27, *A. leucophrys*, Vieill., Gal. Ois. p. 262, *Alauda erythronotus*, Steph. Gen. Zool. vol. xiv. p. 24 (1826), and *Alauda pyrrhonotha*, Vieill. (1816), founded on Le Vaillant's plate, 197, 'L'alouette à dos roux' (see also my 'Birds of S. Africa,' pp. 122 and 212), are identical, being founded on birds procured from different parts of Africa, varying in size, brightness of coloration, and sex.

A very large series of these birds, possessed by Mr. Sharpe and myself, unmistakably proves this. *Anthus* (*Alauda*) *pyrrhonothus*, Vieillot, being the oldest name, must take precedence.

Other identifications I leave for the forthcoming revised edition of my ‘Birds of S. Africa;’ but, in anticipation of it, I may mention that two new birds have been added by me to the South-African fauna, both shot by myself in the Eastern Province, at and near Graham's Town:—

First, *Hirundo puella,* Temm., which was found by Dr. Edwin Atherstone at Graham's Town, and by me in large flocks, perching on the ground on the open space round the Fort at Committee's Drift, in which ruin the residents in the neighbourhood assured me it built. It has also been received from Natal by Mr. Sharpe. It was not found by M. Verreaux at the Cape. Its chief habitat seems the Fantee country, whence Mr. Sharpe has several specimens.

Secondly, a *Pycnonotus,* which Mr. Sharpe believes to be identical with *P. tricolor* (*Ixos tricolor,* Hartlaub) from Angola. I confess I do not quite agree with him, though I admit that the species run much into one another. In an Angola specimen before me, which Mr. Sharpe takes to be a bird in full plumage, the upper parts, including the head, and wing- and tail-feathers, are of a uniform rufous brown, differing considerably from the blacker brown of a young bird of the Cape race. Though the colour of the back approaches that of a fine adult male shot by me in March, that specimen has dark black-brown wings and tail-feathers, and a very distinct dark cap on its head, not visible in the young bird. Again, *P. tricolor* has the brown of the chest much more distinctly marked, and separated from the pale (nearly white) abdominal region; in the Cape bird the abdomen is of a confused whitey-brown, which mingles with the brown of the chest. *P. tricolor* has the inside of the shoulders nearly pure white; in the other this is brown. The yellow vent of the Cape bird is also much deeper, and more brilliant in colour.

I know that not much dependence can be placed on the length of a stuffed skin; but the general appearance of the Cape bird is more robust than the Angola specimen of *P. tricolor.* Careful measurements show the following results:—

	Length.	Wing.	Tail.	Tarsus.	Hinder nail.	Bill.
Angola bird	7″ 3‴	3″ 7‴	3″ 6‴	9‴	3‴	7‴
Cape bird	8″	3″ 10‴	3″ 8‴	11‴	3½‴	8½‴

Any one acquainted with the *Pycnonoti* knows the strong family resemblance between the various species; and, unwilling as I am to make new ones, I cannot but look on this as at least a local race, though I forbear to give it a name. Hitherto its western limit, within my range, has been Graham's Town; to the eastward it extends to near Delagoa Bay, where Mr. E. C. Buxton obtained it, and at once noted the black eyelid, which distinguishes it from our other two species, *P. capensis* with the white eyelid, and *P. nigricans* with the red eyelid.

I should not wonder if this was the species intended to be described by Le Vaillant as "Le Cudor," Ois. d'Afr. pl. 107. fig. 2. The locality in which it was procured would seem to indicate this; and the explanation which M. J. Verreaux gives of the circumstances which led Le Vaillant to figure so many eastern and fabricated specimens as South-African enables one to comprehend many hitherto inexplicable blunders.

M. Jules Verreaux, when very young, was personally acquainted with Le Vaillant; what a link to the past it seems! He states that when Le Vaillant collected in S. Africa he knew nothing of ornithology as a science. His collections were nearly all lost by the sinking of the ship in which they were being transmitted to Europe; but he saved his MS. notes, and, being unwilling that the work of so many years should be entirely lost, he rummaged every collection to which he could get access. Where he found any bird which he thought resembled (or actually was) what he had shot at the Cape, he figured it, and appended to it his notes of the real Cape bird. In this way he became a prey to unscrupulous traders and bird-skin makers, and figured many species closely allied to African birds, but which have not the least claim to be called South-African.

In justice to Le Vaillant—to whom, on the other hand, I have always accorded full praise as a most accurate observer when his bird really did exist in S. Africa—I lose no time in publishing this explanation. Still I must say, as a certain Lady Mayoress is said to have exclaimed, "He didn't ought to to have done it."

XVIII.—*Notes on some Passerine Birds, chiefly Palæarctic.*

By H. B. Tristram, LL.D., F.R.S.

Professor Spencer F. Baird has most kindly forwarded to me for examination the types of the species of Passerine birds collected in Alaska by the Scientific Expedition under Mr. Kennicott and Mr. Dall. These prove, as Prof. Newton has already remarked (Ibis 1870, p. 521), the decided Palæarctic bearing of the avifauna of Russian America—a hint that Nature sanctioned its tenure by the Czar.

1. *Saxicola œnanthe* in no respect differs from a Lapland specimen shot at the same time of year, the month of May.

2. *Budytes flava,* St. Michael's Bay, 6th June, with white superciliary streak, is identical with specimens in breeding-plumage from the Atlas, Palestine, and Lapland.

3. *Phyllopneuste kennicotti,* Baird, St. Michael's, 16th August, proves identical with *P. borealis,* Blas. The synonymy of this species, therefore, is *Phyllopneuste borealis,* Blas. ('Naumannia,' 1858, and 'Ibis,' 1862, p. 68), =*sylvicultrix,* Swinh., =*kennicotti,* Baird, =*eversmanni,* Midd., nec Bp., =*flavescens,* G. R. Gray.

I may observe that there is considerable variation in size in the specimens forming the magnificent series of this species collected by Mr. Swinhoe in China, particularly in the size of the bill; but as all the specimens were collected in the same district in spring and autumn, and possess no other diagnostic characters, I cannot separate them. Nor are the variations greater than in British specimens of *P. trochilus.*

Mr. Swinhoe possesses a specimen, obtained by v. Schrenk, from the Kurile Islands, which agrees with the Alaska bird in having the bill as small as in the smaller Chinese specimens.

All the summer-killed specimens before me, from Alaska, the Kuriles, and Lake Baikal, have the bill and tarsi rather darker than in Chinese spring and autumn birds. This agrees with the observation of Blasius ('Ibis,' 1862, p. 70).

4. *Pyrrhula coccinea,* var. *cassini.* This most interesting bird proves, as was conjectured by Prof. Newton (Ibis, 1870, p. 521), to be a new and good species, and must stand, therefore, as *Pyrrhula cassini,* Baird, distinguished from *Pyrrhula coccinea* by the absence of any red on the lower parts, which are

of precisely the same brown as in the female of *P. griseiventris*, while the back is of the same rich ashy hue as in the male of *P. coccinea*. In measurements it very slightly exceeds the largest specimen I possess of the latter. It is a male bird, shot January 10th, at Nulato, and is evidently adult, from the rich, well-defined black colour of the head. The cheeks are faintly tinged with rose.

This large and fine Bullfinch evidently bears the same relation specifically and geographically to *Pyrrhula griseiventris*, Lafr., which *P. coccinea* does to our more southern and western *P. rubicilla*, Pall.

This bird makes the second new species added to the genus since the publication of Mr. Blyth's paper (Ibis, 1863, p. 440).

We may therefore now arrange the species of the genus *Pyrrhula*, as restricted, thus:—

A. Species inhabiting the northern region. All with black heads.

a. With white rump.

Majores.—1. *Pyrrhula coccinea*, De Selys, Europe.
2. *P. cassini*, Baird, Alaska.
Minores. 3. *P. rubicilla*, Pall. (=*pyrrhula*, L., *vulgaris*, Temm., *europæa*, Leach), Europe generally, except Scandinavia (?) and the extreme south.
4. *P. griseiventris*, Lafr. (=*orientalis*, Temm.), Japan.

b. Without white rump.

5. *P. murina*, Godm. Azores.

B. Inhabiting the Himalayan region. Without a black head.

6. *P. erythrocephala*, Vig. Himalayas generally. Head red in male, and yellow in female.
7. *P. aurantiaca*, Gould. Kashmir. Head and back orange in the male.
8. *P. erithacus*, Blyth. Sikhim. Head and back ash-coloured, pectoral region bright red.
9. *P. nipalensis*, Hodgs. Eastern Himalayas. Head and back ash-coloured, lower plumage paler ash-colour.

The two geographical groups of *Pyrrhula* are thus very broadly distinguished by the presence or absence of the black head.

I must take the earliest opportunity of correcting a mistake into which I was led in the last number of 'The Ibis' (1871, p. 110), when I stated that *Sylvia maacki*, Schrenk, was identical with *Phylloscopus fuscatus*. I was led into this error by receiving from Paris two specimens wrongly labelled as *S. maacki*. I have since found that the true *S. maacki* is perfectly distinct, and is a *Calamoherpe*. I can only plead, in apology, the difficulties of a naturalist writing isolated in the country, dependent entirely on his own library and collection.

A careful comparison of a series of specimens from Japan, China, and India has shown me that *Reguloides occipitalis*, Jerd., J. A. S. xiv. p. 593, is identical with *Pyllopneuste coronata*, Temm. & Schl., and that this species extends its range through India, China, Japan, and Siberia, where it ordinarily breeds. Of course Temminck's name will have the precedence.

While thus reducing the number of Sylviads, I think I am fully justified in separating the eastern and western forms of *Anthus cervinus* and *A. rufigularis*, which have generally been treated as synonyms.

An examination of a very large series of specimens, including the largest collections in England, has satisfied me that there are two distinct species of Red-breasted Pipit in the Old World:—a western form, having in summer the throat rufous with broad black spots on the breast, and the abdomen a dusky white, which extends from the Western Siberia westwards; and the eastern form, which is distinctly separable by the absence of the pectoral spots in summer, and by the extension of the chestnut coloration from the throat to the abdomen. This form extends from South China to Kamtschatka. I should assign to this the name *A. rufigularis*, Brehm, which is evidently taken from a specimen of this bird in winter, but for the evidence before me that Brehm intended to designate the western bird.

Pallas's description (Zoogr. Ross.-As. i. p. 511) applies to the western, not the eastern form. My own skin, marked by

Brehm himself, is an Egyptian specimen, and distinctively of the western type. Consequently Brehm's name merges as a synonym. Middendorff notes his species in Siberia under these two names. I cannot apply Pallas's name, which has the priority, to the eastern form, as he distinctly states, "Gula late, collum, jugulumque colore exolete ferrugineo, versus pectus sensim dilutiore. Juguli latera punctis acutis nigris. Pectus pallidum, latera lineolis nigris longitudinalibus. Venter et crissum alba," —all of which apply to the western, not the eastern form. I think, therefore, that henceforth *A. japonicus*, Temm. & Schl., must be the accepted name for the eastern, as *A. cervinus* for the western form, Temminck's type having clearly the rufous throat and *abdomen*. *Anthus rosaceus*, Hodgs., is clearly distinct, being very common in North India at all seasons, and having always sulphur-coloured axillaries, which are never found in the chesnut-breasted bird. These Indian species have been worked out with extreme care by my friend Mr. W. E. Brooks, C.E., who has recently discovered *Anthus spinoletta* in great numbers in the North-west Provinces in winter.

XIX.—*Supplementary Notes to 'The Birds of India.'* By T. C. Jerdon, Retired Deputy Inspector-General of Hospitals, Madras.

The following notes contain additional information on the habits and geographical distribution of many of the birds of India, gleaned by the author in his travels in the north-west of India, Assam, and other parts, since the publication of his book, notices of additional species observed by himself or other ornithologists, and observations on various critical remarks that have been made by commentators on 'The Birds of India.'

As it is intended in a future edition of 'The Birds of India' to include the birds of Assam, the Khasia Hills, Cachar, Tipperah, &c., as far as Chittagong, a few notices will be found in these notes of certain species found in those localities, but not included in 'The Birds of India.'

1. VULTUR MONACHUS.

I found this fine Vulture by no means rare throughout the greater part of the North-west Provinces, becoming more common in the country north-west of Delhi in the cold weather. It breeds, occasionally at all events, on trees in the outer ranges of the Himalayas. One killed near Sirsa was 44 inches long; extent of wings 9 feet 2 inches; wing 32 inches. The cere and naked parts of the face ashy-bluish or pale mauve, the legs fleshy-white.

3. Gyps fulvus.

Mr. Hume* considers that he has two species of *Gyps* neither of which is true *G. fulvus*. The Himalayan bird he calls *G. himalayensis*; but though he describes it, he does not particularize the points in which it differs from *G. fulvus*.

The other species, which is as large, occurs in the plains of the extreme North-west Provinces and Punjab, and is essentially a Vulture of the desert. It breeds in trees, laying, as usual, one white egg. This he calls *G. fulvescens*, and describes both with full measurements, *l. c.*

I saw Mr. Hume's specimens, but I can add nothing to his observations, except that the Vulture which I gave as *V. indicus* in my original "Catalogue of Birds of the Peninsula of India"† is probably the same as his *G. fulvescens*, and not *G. indicus*, and that it is also the *V. indicus* of Adams.

Mr. Gurney says that he considers *G. himalayensis* may be new, but that *G. fulvescens* is apparently young *G. fulvus*. The former species differs from *G. fulvus* by having the fourth primary the longest.

4. Gyps indicus.

I have probably overstated the extreme measurements of this Vulture, as suggested by Mr. Hume, who gives 40 inches as the greatest length of any examined by him, with an expanse of 92 and wing 23½.

5. Gyps bengalensis.

I found this Vulture pairing in December in the Bijnoor district. A pair had their nest in a large tree under which my tent was pitched, and gave utterance to an unearthly hoarse cry *in copulâ*, as well during the night as in the day.

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* My Scrap-book, or Rough Notes on Indian Ornithology, i. p. 12.

† Madras Journal, 1839, *et seq.*

Mr. Hume cannot help thinking that in describing the young of this bird I must have had in view a young *G. indicus*; but he may rest assured that I could not have mistaken the birds for a moment; and my description of the conspicuous pale centring of the feathers of the lower parts of this bird might have shown him the improbability of such an error, without referring to the structural differences of the two.

Count Salvadori showed me, in the museum of Turin, specimens of what has been considered the same species from Africa, but which he has justly, I think, separated as *G. africanus*.

6. NEOPHRON PERCNOPTERUS.

Our Indian bird is considered by Mr. Blyth to be distinct from the African species, and in that case will stand as *N. ginginianus*, Daudin. The African bird has the corneous portion of the bill black, and the claws black, whilst ours has the bill yellow and the claws fleshy-white. The African bird, moreover, is larger, and with comparatively stronger tarsi and claws.

Our Indian bird occurs in the north-west Himalayas, and is common in the large stations, up to at least 9000 feet elevation.

7. GYPAETOS BARBATUS.

This Vulture is exceedingly common in most of our hill-stations in the north-west Himalayas, and most numerous where there are convalescent depots of European troops stationed, being attracted by the greater abundance of offal and refuse in such places, which certainly form the chief part of the food of this Vulture. At Landour it is very common, and quite fearless of man, often passing overhead within a few yards and alighting on the ground not far from a road. Both in general structure and habits I consider *Gypaetos* most nearly allied to *Neophron*; and Mr. Hume, who agrees with me in this, tells me that he has known it (like the *Neophron*) to feed on human ordure. In the interior of the hills it is said at times, at all events, to carry off Pheasants, Chukor Partridges, and, occasionally, young lambs; and Mr. Brooks mentions that a rabbit-yard at Almora was visited by one of these birds, and rabbit after rabbit carried off. I much doubt the stories related of its pushing large animals over cliffs. I found it in considerable numbers frequenting the cliffs on the south face of the Salt range of hills in the Punjab, not far from Jhelum.

8. FALCO PEREGRINUS.

I must really doubt the probability of this bird breeding in our limits, as considered not unlikely by Mr. Hume. Had it done so near Peshawur, the most likely locality in India, it certainly would not have escaped the observation of such a skilled falconer as Major (now Colonel) Delmé-Radcliffe. The few Peregrines I have had in my possession procured in the Punjab appeared to me to be smaller than the coast-race I was so familiar with in the south of India.

9. FALCO PEREGRINATOR.

This fine Falcon certainly appears to be rare in Northern India. Hodgson has only one drawing of it in his collection of drawings at the British Museum; and another species of Falcon appears to have been mistaken for it both by Mr. Hume and Colonel Delmé-Radcliffe. It is, as stated by Schlegel, nearly related to *Falco macropus*, Swainson (*melanogenys*, Gould), of Australia, which also extends into Malayana.

Mr. Hume in criticising my origin of the name of the male, *Koela* or *Kohila*, as being derived from (not as being a corruption of) the name of the female bird *Kohi*, must have forgotten the similar origin of the names of other male Falcons, to wit, *Charghela* from *Charagh*, *Dourela* from *Douri*.

9 *bis*. FALCO ATRICEPS, Hume.

I am glad to find that Mr. Gurney has allowed this to be a distinct species. I distinguished it at once, as Mr. Hume points out, from *F. peregrinator*, though I had then seen only one specimen. Mr. Hume has recently, I believe, procured many specimens, as has also Mr. Brooks; its eggs, too, have been obtained near Dhurmsala. It appears to be not rare in the Himalayas; and I have very little doubt that it was this Falcon which I saw near Kotegur in 1865, and of which Mr. Berkeley had a specimen, which, with others procured subsequently at my request, he forwarded to me, but which unfortunately never reached me.

M. Jules Verreaux was certainly in error in referring it to *Falco melanogenys*, which, as previously observed, is much more near *F. peregrinator*. When I first saw Mr. Hume's then unique specimen, I was, from a vague conception (for I had not seen a specimen), inclined to consider it *F. barbarus*; and I see from Mr. Gurney's notes that a specimen of this species is in the Leyden Museum, labelled as *F. barbarus*. The bird was well known to Hodgson, and is figured by him in two states of plumage as *Falco micrurus*; but that name, I believe, has not been published. The confluence of the cheek-stripe does not appear to be constant, and is not strongly marked in Hodgson's drawings. I should be inclined to look on it, theoretically, as a small local race of *F. peregrinus*. If this Falcon is, as I understand from Mr. Hume, the *F. peregrinator* apud Delmé-Radcliffe, it is stated by him to be common in the hills near Murree, and to feed much on green Pigeons and also on the Chukor partridge. The same gentleman records the curious fact (which I have also noticed in other Falcons) of its propensity to fly at Bats. This Falcon is usually called *Shahin*, or *Kohi*, sometimes with a prefix, signifying black, the *Kala Shahin*. Hodgson's falconers named it *Jáwali Kuhi*.

10. FALCO SACER.

When I wrote the first volume of the 'Birds of India' I had not seen a specimen of this Falcon. Since that time I have seen very many, have had many trained ones in my possession, and killed them in their winter haunts. One of the most characteristic points of this Falcon is the long tail, marked with round or roundish pale spots, not bars; and this character equally occurs in the bird of the year and the old bird. Young birds vary much in the shade of their upper plumage, some being quite dark brown, others pale earthy brown, some having the head with a rufous tinge, most with a creamy or pale fulvescent hue—and also in the amount of the brown spots on the lower surface, some having them so thickly spread that the abdomen appears almost uniform brown, as in a young Jugger, others with the spots few, smaller, and distant. The males are, I think, as a rule less numerously spotted than females, and have the head and neck paler.

The measurements given in the 'Birds of India' are copied from various authors, and are necessarily imperfect. A fine male that died whilst being trained was 19¼ inches long, the wing 13½, tail 8, mid toe with claw 1⅞. A female was 22 inches long, expanse 49, wing 15¾, tail 9, tarsus 2, mid toe with claw 2½. Weight 2 lb. 2 oz.

The Cherrug Falcon visits the Punjab and neighbouring provinces on this side of the Sutlej in considerable numbers in the cold weather, and is still more numerous and common all along the northern and western frontier. Many are caught annually in the Punjab, near Lahore and Umritsir, and also about Ferozepore and the desert country east of the Sutlej. Near Sirsa I have seen five or six in one morning's ride; and one or two came regularly to roost on a tree close by the traveller's bungalow there. I never saw it in Kashmir, and I do not think that any are captured there. I had not an opportunity of observing what this Falcon chiefly preys on; but all the Punjab falconers assert that its especially favourite food is the large "*Sandha*" Lizard (*Uromastix hardwicki*).

The Cherrug is flown chiefly at the Houbara Bustard (*H. macqueeni*), also at Hares, Kites, and occasionally at the Koolun (*Grus cinerea*) and the Heron. I have had several trained for Cranes, and killed a few; but it is certainly not such a good and bold bird for that large quarry as the Peregrine. On one occasion I slipped a Cherrug at some Cranes; and immediately afterwards four or five Sarrus (*Grus antigone*) rose just behind them. The Falcon came up first with these, and immediately attacked one and brought him to the ground. On my riding up I found the Falcon clinging to her huge antagonist, who was in vain endeavouring to shake her off and strike her with his curved claw. I dismounted immediately and secured the prize. My falconers considered this a great feat. After the Houbara the flight is often prolonged for two or three miles, and occasionally the bustard escapes. After Hares two Falcons are often slipped, and manage to secure the hare between them; but when one only is used, a dog is generally slipped as well, and, unless the ground is very unfavourable, it generally secures the Hare after it has been struck three or four times by the Falcon. It is not unfrequently happens that the Hare is fairly lifted off the ground by the impetus of the Falcon's swoop. The flight of the Cherrug after a Kite is very amusing, as the quarry makes extraordinary exertions, by rising to a height and dodging the stoop of the Falcon, to escape her inevitable capture.

Of the published figures of this Falcon many are very imperfect, and very few show the round spots on the tail-feathers. I cannot help suspecting that another species of Falcon is often confounded with the true *F. sacer*. I first heard of this bird from Colonel Delmé-Radcliffe, who wrote me that he had once seen a large Falcon like the Cherrug, but with the upper plumage somewhat banded and Kestrel-like. The late Dr. Scott obtained a specimen (which was shot at Umballa) of a female Falcon which closely tallies with this notice; and Lord Walden now possesses this specimen, which I saw and took a note of at Dr. Scott's. The whole upper plumage is banded with reddish isabelline on a brownish grey ground; the tail with pale rufous bars (not spots); the moustachial streak very narrow; lower plumage white, with drops of brown on the breast, larger on the flanks and thighs, and obsolete on the under tail-coverts. Length 24 inches, wing 16½, tail 10, middle toe 2⅝. Hodgson has one drawing of this bird, which might have been taken from the specimen noticed; and it appears to me that the *F. sacer* figured by Wolf, in the 'Zoological Sketches,' must have been the same bird, and not true *F. sacer*.

The claws of the specimen are exceedingly blunt. I imagine that it is an old bird. Should it be considered distinct, as at present I must conclude, I would propose that it should retain Hodgson's name of *milvipes*, which is quite appropriate. It will be noticed that it is somewhat larger than true *F. sacer*. Its Kestrel-like appearance is very remarkable.

12. FALCO BABYLONICUS *.

This Falcon I find to be the one generally called *Shahin* in the Punjab, usually without any prefix. According to Colonel Delmé-Radcliffe it is sometimes called *Safeid Shahin, i.e.* white Shahin, or *Lal-sir Shahin,* meaning red-headed Shahin. I have had several brought to me captured close to Umritsir, and have seen them taken not far from Delhi. Mr. Hume has also received it from Central India. It clearly belongs to the Peregrine group rather than to the Lanners, with which, following Sclater, I classed it in my 'Birds of India;' and this was long ago pointed out to me by Colonel Delmé-Radcliffe before I had seen it myself. It is not very highly esteemed by the Punjab falconers; but Delmé-Radcliffe says that it is highly valued at Peshawur; He states that an old Falcon which has moulted seven times, in the possession of Lieut. Griffiths, kills Black Curlew (*Geronticus papillosus*), Mallard, Teal, and all the kinds of Partridges. They are usually trained for Partridges and Plovers.

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* Ibis, 1861, p. 218, t. vii.

A female, in her second year, that died in my possession had the head deep rufous, some of the feathers centred with slaty brown, and a line from the eye to the nape also rufous; the upper plumage generally ashy, each feather banded with dark slaty- and edged with pale rufous-grey; the rump a clear ashy-blue, with the dark markings somewhat arrow-shaped; tail slaty with a tinge of rufous, and tipped with the same; beneath rufescent, whitish on the chin and throat; a few small brown spots on the lower parts of the breast and abdomen; the flanks and under wing-coverts narrowly banded with dusky brown; thigh-coverts with small arrow-shaped marks; tail beneath dusky brown, with pale rufous bands on the inner webs only of the quills. Cere yellow; bill bluish, black at the tip; legs and feet yellow. Length 17 inches, expanse 42, wing 12, tail 6½, mid toe with claw nearly 2½. A young bird in its first plumage, but much abraded, has the whole upper parts dull brown, the white of the chin and throat extending partially on the sides of the neck; the lower parts very pale whitish rufescent, with numerous longitudinal oval streaks of brown; the tail a darker brown, with pale rufescent bands.

This Falcon is clearly the *Falco peregrinoides* of Gray's 'List of Hodgson's Nepal Birds;' and Hodgson has figured it under that name among his drawings in the British Museum. It so closely resembles the figure of that Falcon in Temminck's

'Planches Coloriées' that I concluded they must be the same bird; but I find that that bird is now generally looked on as the same as *F. barbarus*.

With age the back of the adult becomes very pale slaty, and the rufous of the head generally is somewhat paler than in younger birds; but Delmé-Radcliffe states that he has seen some birds with the head as red as that of the Turumti (*Falco chicquera*).

15. LITHOFALCO ÆSALON.

The Merlin visits the Punjab and upper portions of the North-west Provinces in winter. I have had several brought me captured near Umritsir; and when out on a hawking-tour, my falconers caught one not far from Delhi. It is called by the Punjab falconers "*Retal turumti*," or "*Regi*," but by Hindustanis "*Dourai*" and "*Dourela*," a name which in 'The Birds of India' I have applied (no doubt on erroneous information) to the Hobby.

The Merlin is usually trained for the Hoopoe, after which it affords fair sport, and the quarry very often escapes. Occasionally it is trained for Quail.

17. TINNUNCULUS ALAUDARIUS.

Mr. Hume puts a query of doubt to my notice of the Kestrel breeding in May, June, and July. Why? By his own showing Captain Cock found in one nest only one egg, laid 27th May; on 5th June there were three. When would the young birds have left this nest?

18. ERYTHROPUS CENCHRIS.

Indian specimens of this bird differ somewhat from the European bird in the adult male plumage; for in Indian and Chinese examples the whole of the lesser, median, and greater wing-coverts are bluish grey, whilst in the European bird the lesser and median coverts are vinaceous red. Mr. Swinhoe was the first to notice this, and, I believe, called the bird *E. pekinensis*; but I see that in the excellent figures of this Falcon, both in Buchanan's and Hodgson's drawings of birds, this mode of coloration of the adult male is distinctly represented. Not having seen a specimen in that plumage, I described the European adult in my 'Birds of India;' and Mr. Hume has apparently done the same in his 'Scrap-book.'

19. ERYTHROPUS VESPERTINUS.

The form of this Falcon found in North-eastern Asia has the under wing-coverts white, with some dusky bars, whilst in the European race they are pure grey. It has been named *E. amurensis,* and is beautifully figured by Wolf in 'The Ibis' for 1866. Nepal specimens examined prove the Indian bird to belong to this race, which has also been found in Southern Africa.

20 *bis.* HIERAX MELANOLEUCUS, Blyth.

This rare Pigmy Falcon has been lately procured by Major Godwin-Austen in Cachar.

21. ASTUR PALUMBARIUS.

A few Goshawks find their way to the plains of the Punjab during winter, and now and then are captured. Most of the birds that are brought in such numbers for sale every year are taken in the hills, in large nets hung between trees. I saw a pair, evidently breeding, in a wood in the Asrang-valley, beyond Chini, on the Sutlej, at about 12,000 feet elevation.

The Goshawk is, perhaps, the greatest favourite with natives for hawking, as it is much the most expensive, untamed birds being rarely sold for less than 50 rupees (£5). In a good sporting-country one or two Goshawks will furnish daily a fair supply of game, Partridges, Hares, Duck, Plover, &c.

24. ACCIPITER NISUS.

I believe that a few pairs only breed on some of the higher ranges of the Himalayas. I have killed it in July in Gulmurg, in Kashmir, at 10,000 feet elevation. When Dr. Stoliczka says it is "more common on the lower hills than in the interior," I presume he means either very early in the year or in the autumn, *i. e.* during the periods of migration; for I greatly doubt its breeding in such localities.

24 *bis.* ACCIPITER MELASCHISTUS, Hume.

I quite agree in the separation of this species from *A. nisus,* as, indeed, I did as soon as I saw Mr. Hume's two specimens. It may be looked on as a dark local race of *A. nisus.* It is figured by Hodgson in his drawings; but no distinct name given.

25. ACCIPITER VIRGATUS.

I have not at present sufficient materials to work out my ideas respecting this species; but I have come to the conclusion that *A. gularis*, Schlegel, is the same as the northern or Himalayan form of *virgatus*, but that perhaps the southern or Malayan race is distinct. Certainly many of the specimens got in the Himalayas do not differ from Schlegel's figure in the 'Fauna Japonica.' Mr. Thompson, however, in Hume's 'Scrap-book,' indicates two races even in the Himalayas; and one of Hodgson's drawings appears to represent one of them. I am doubtful whether Blyth's *A. nisoides* is the young of this or not.

26. AQUILA CHRYSAETUS.

I have seen this magnificent Eagle occasionally in the upper portion of the Sutlej valley, always at great elevations, never less than 12,000 feet; but in Ladak it is much more common from 10,000 to 11,000 feet, and I used to watch in vain for two or three nights in succession to get a shot at a pair that roosted in a magnificent deep ravine close to where my tent was pitched. It is always said by the hill-people to prey much on *Tetraogallus* and *Lerwa*.

27. AQUILA IMPERIALIS.

It has lately been attempted to show that the Indian race of this Eagle differs from the European one, the plumage of the young bird especially differing in a marked degree. Hodgson, too, insisted that his *vittala* (not *vittata*, as generally written) is distinct from *A. imperialis* (his *nipalensis*); and Mr. Hume is inclined to agree with him. Blasius also gives *bifasciata*, Gray (which is *vittala*), from central Asia, as distinct from *imperialis* of Europe. I have not sufficient materials to elucidate or even to add any important particulars on this point; but I may state here that one of Buchanan-Hamilton's figures represents the plumage of the adult European bird with a distinct white shoulder-patch.

28. AQUILA NÆVIA.

Many African travellers and naturalists speak of this Eagle as frequently being seen to pursue Falcons, to rob them of their prey. It is, I think, much more probable that the Eagle observed was in all cases *A. nævioides*, the Indian representative of which is notorious for this habit, which has not to my knowledge been noticed of *A. nævia* by any observer in India, where its chief food has been found to be frogs.

29. AQUILA FULVESCENS.

The distinctness of the Indian tawny Eagle from the African *A. nævioides* has for some time been recognized by the best observers. Among other late authorities, Mr. W. Blanford, when in Abyssinia, obtained true *A. nævioides*; and he insists on this being perfectly distinct from the Indian bird, the bill and legs being constantly larger. But quite recently Messrs. Brooks and Hume have procured specimens in fulvous plumage of a large Eagle quite distinct from the ordinary Indian one, which has been confidently pronounced to be true *A. nævioides*, and which must therefore be added to our fauna.

29 *bis*. AQUILA NÆVIOIDES, Cuvier.

Several specimens have now been obtained in the North-west Provinces of India, near Etáwa and elsewhere; and it will doubtless be found hereafter to have a more general distribution, throughout Western India at all events. It appears not improbable that the figure of *Aquila fulvescens* in Hardwicke's 'Illustrations' is taken from this species, and not from the common Tawny Eagle, which must therefore be named either *fusca*, *punctata*, or *vindhiana*. If Gray's names have the priority over that of Franklin, I should suggest the adoption of *punctata* as being in a state of plumage much more resembling that most commonly met with than *fusca*.

30. AQUILA HASTATA.

No specimens of this Eagle have been obtained lately; and Mr. Hume is inclined to doubt its distinctness from *A. nævia*. It is certainly somewhat remarkable that so many practical naturalists should have considered this Eagle a distinct species, all of whom were more or less well acquainted with *A. nævia*.:—first Lesson, the namer of the species; then myself, when I described it as *Spizaetus punctatus*; then Mr. Blyth and Mr. Frith, in Bengal, and Mr. Hodgson, in Nepaul, who figures it under the name of *Aquila tarsata*, from one of its characteristic points, the lengthened slender tarsus. Quite recently Major Godwin-

Austen obtained a specimen which he at once identified from my description; and he describes the tarsus of this as five inches long. Most unfortunately, however, his specimen was destroyed after he had taken the fresh measurements. There is no doubt, however, of its being nearly allied to *A. nævia*, but differing in being somewhat smaller and more slender, having a smaller bill, and in the tarsus being longer and more slender.

31. AQUILA PENNATA.

If our Indian bird is the same as the European one, which has hitherto been generally allowed, I find that the mass of evidence is against my belief in the white-bellied bird being the young one. At one time I had the opportunity of getting many specimens, and my impression is that in more than one case I had found young dark feathers springing from among old white ones; but as at least two instances are recorded of brown-plumaged young birds having been taken from the nest, I must give up my old views. Quite recently, however, I have been told of one young bird in dark plumage, and another one white below, having been taken from a nest in Europe; and Mr. Hume, in his 'Scrap-book,' is also inclined from information he has received to agree with me.

Mr. Blyth, however, has just told me that he considers the Indian race to be more nearly allied to the Australian *Aquila morphnoides* than to the European bird. So the whole subject appears to require fresh researches.

33. NISAETUS BONELLI.

I found an eyry of this fine Eagle at Toglegabad, near Delhi, on a bush or small tree growing out of the old fort-wall. Mr. Hume has also discovered the same nest.

34. LIMNAETUS CALIGATUS.

I do not see in what respect Tytler's *Spizaetus andamanensis* differs from the young of this common Bengal Eagle. It corresponds in size and in coloration with that described in my text.

36. LIMNAETUS NIPALENSIS.

Falco orientalis, Temm. & Schl., given by me, but with a query, as the same as the Himalayan bird, is very distinct, being smaller and wanting the fine crest. Our bird extends throughout the whole extent of the Himalayas to Kashmir. In the cold weather it visits the plains at the foot of the hills. I have killed it in the Dehra Doon.

[To be continued.]

XX.—*Letters, Extracts from Correspondence, Announcements, &c.*

We have received the following letters addressed to "The Editor of 'The Ibis'":—

Marldon, Totnes, 8th February, 1871.

Sir,—Captain Shelley, in his very interesting paper on the Ornithology of Egypt, expresses a doubt (*anteà*, p. 39) as to whether the *Gypaetus* which occurs in that country is *G. barbatus* (Linn.), or *G. meridionalis*, Bon. (=*nudipes*, Brehm); and it may therefore be desirable to mention that Dr. Rüppell refers the Egyptian bird to the latter species in his 'Systematishe Uebersicht,' p. 3.

With reference to another point upon which Captain Shelley expresses himself as doubtful, viz. the occurrence in Egypt of *Haliaetus albicilla*, I may mention that an immature specimen in the Museum of the Jardin des Plantes at Paris is marked as having been obtained in the "Desert of Suez," and that an interesting description of the nidification of this species in the neighbourhood of Lake Menzaleh is given by Dr. v. Heuglin in his recent work entitled 'Ornithologie Nordost-Afrikas,' p. 51.

I am desirous also of supplementing Mr. Howard Saunders's remarks on *Aquila nævioides* (*anteà*, p. 61) by the following brief observations:—

I am indebted to the kindness of Mr. Saunders for a recent opportunity of examining his fine series of Eagles, and I now quite agree with him in believing the "café-au-lait-coloured" Spanish Eagles to which he refers to be immature specimens of *Aquila imperialis*, although when I first saw them I supposed them to be examples of *Aquila nævioides* in the first year's plumage, from which they can hardly be distinguished except by their somewhat larger size.

Mr. Howard Saunders, however, showed me a Spanish Eagle from Lord Lilford's collection, which in my opinion is an undoubted specimen of *Aquila nævioides*. Another Spanish specimen of this Eagle is in the possession of my son, Mr. J. H. Gurney, jun.; and two others (which were described by Dr. R. Brehm as a new species under the name of *Aquila adalberti*) are preserved in the Museum at Norwich, as recorded by Dr. Sclater in 'The Ibis' for 1865, p. 359.

Mr. Saunders refers to the opinion entertained by some naturalists that *Aquila nævioides* is the same bird as that described by Pallas under the name of *Aquila clanga.* I have already stated my dissent from this opinion (*vide* Ibis, 1870, p. 69); and as I see no reason to modify the view which I have there expressed, I desire again to allude to it in the belief that a reference to Pallas's original description will bear out the conclusion on this point at which I have arrived.

I am yours, &c., J. H. GURNEY.

Turin, February 26th, 1871.

SIR,—Allow me to say a few words on two species of birds described by me, viz. *Æthopyga lodoisia* and *Pitta bertæ.*

In Lord Walden's article "On the Sun-birds of the Indian and Australian Regions" (Ibis, 1870, p. 35), his lordship unites, although with some doubt, my *Æthopyga lodoisia* with *Æ. flavo-striata,* Wall.! I can positively state that the two birds are quite different. I will only point out here that my bird has the *underparts light grey, the tibiæ and the under tail-coverts yellow,* while in the *Æ. flavo-striata* the *underparts, the tibiæ, and the under tail-coverts, are uniformly blackish brown.*

As regards my *Pitta bertæ,* I see that Mr. Elliot (Ibis, 1870, p. 409) refers it to *P. cyanoptera* (I do not think that the name of *P. moluccensis* is at all adapted for this bird, seeing it has never been found in the Moluccas). If Mr. Elliot had had the opportunity of inspecting the type specimen, he would have seen that the principal differences between my bird and the *P. cyanoptera* consist in the colour of the crown, which is chestnut in my bird, and in the small white spots on the primaries, exactly like those of the *P. bengalensis.* These differences have been pointed out very clearly in my description; but it seems that they have been overlooked by Mr. Elliot, as he has not mentioned them. Several ornithologists who have seen my bird, among whom are Monsieur Jules Verreaux, Dr. Sclater, and Dr. Finsch, have declared that my bird is not *P. cyanoptera.*

I remain, Sir, yours &c.,
TOMMASO SALVADORI.

Magdalene College, Cambridge,
25 March, 1871.

SIR,—On a former occcasion (Ibis, 1865, p. 504) I expressed a belief that the *Lagopus* of Spitsbergen, first described by Mr. Gould under the name of *L. hemileucurus,* was identical with *L. rupestris.* I now wish to state that I have much doubt on that point, and that I am inclined to recognize its distinctness. Hofrath von Heuglin has within the last few days kindly sent for my inspection some birds' skins collected by him in that country last year. Among these are three specimens of *Lagopus*; and on comparing them with a tolerably good series of examples of *L. rupestris* from Greenland (*L. reinhardti*) and Iceland (*L. islandorum*), I find that the rectrices of all the Spitsbergen birds are so much variegated with white as fully to deserve the name applied by Mr. Gould, while those of *L. rupestris* are invariably black, except in some cases at the tip. Furthermore, one of the Spitzbergen birds, marked "male" by Herr von Heuglin, though apparently fully coloured on the breast and back, is of a very different shade from any male of *L. rupestris* that I remember having seen. Under these circumstances I think that it is quite possible that *L. hemileucurus* is entitled to specific rank, though it is certainly more nearly allied to *L. rupestris* than to *L. alpinus.*

I am, Sir, &c., ALFRED NEWTON.

New York, March 13th, 1871.

DEAR SIR,—With reference to your paper on *Psittacidæ* in the last number of 'The Ibis,' I have some remarks to make regarding the specimens of *Chrysotis* in my collection, and under examination from other sources.

1. C. FARINOSA (*pulverulenta*). The Costa-Rica specimens so called, I think Prof. Baird wrote me were *C. guatemalæ*—you are probably right in so referring them; but these and *C. viridigenalis,* spoken of under *C. autumnalis,* I want to examine before fully

stating what they are, though you are probably right. You err, however, in saying my specimen of *C. farinosa* from Panama is *C. guatemalæ*; it was correctly identified, and I find it agrees with Finsch's description in every particular—head green, edge of wing red, occiput fringed with violet, outer web of outer rectrix marked with blue.

2. C. GUATEMALÆ, with a light blue crown, I have, from the city of Mexico.

3. C. DIADEMATA. The specimen from Panama called *C. viridigenalis* is this species, agreeing with Finsch's description. I see by my note-book that Cassin's type of *C. viridigenalis* agrees with *C. coccineifrons*, as stated by Finsch.

4. C. AUTUMNALIS. I have this species from the city of Mexico; it is also in Sumichrast's collection from Tehuantepec. Baird tells me the species from Costa Rica called *C. viridigenalis* is *autumnalis*; probably he so informed v. Frantzius.

5. C. FINSCHI. Specimens are in Sumichrast's collection from S.W. Mexico (now in my hands); also in Grayson's, from Mazatlan, and Xantus's, from Colima. It differs from *C. diademata* in being rather smaller, of a lighter green, the feathers above and below with blackish margins; the front is dull deep crimson (in the other it is bright scarlet), the cheeks are light yellowish-green, the lilac edgings to the feathers of the crown are deeper in colour than those of *C. diademata*. The tail-feathers are without red at the base. You certainly misquote Finsch in saying, "the under surface without dark edgings to the feathers, and the base of the outer rectrix has a red patch." He says just the contrary.

6. C. LEVAILLANTI I have from the city of Mexico; specimens are in Grayson's collections, made at the Tres Marias, and also in Sumichrast's, from Tehuantepec. One specimen from the Tres Marias seems in unusually perfect plumage: the entire head and neck are yellow as far down as on a line with the bend of the wing—the front, cheeks, and throat pale sulphur-yellow, the remainder deeper in colour; the thighs and edge of the wing are also clear yellow, the flexure scarlet, the outer web of the outer rectrix edged with blue: this and other specimens have the yellow feathers of the neck more or less edged with

light scarlet. The majority of specimens I have seen have the yellow of the head less in extent.

7. C. ALBIFRONS. From Costa Rica, Yucatan (*Schott*); S.W. Mexico (*Sumichrast*); Mazatlan (*Grayson*).

I have never seen *C. auripalliata, C. coccineifrons, C. ochrocephala,* or *C. xantholora* in any of the collections I have had for examination.

I am yours &c.,
GEO. N. LAWRENCE.

[We have to thank Mr. Lawrence for calling our attention to the misquotation at p. 97; the passage should run, "and the latter (*i. e. C. diademata*) has the under surface &c."

As regards the Panama specimen called by Mr. Lawrence *C. farinosa*, we have only to say that, having identified the Costa-Rica bird called *C. pulverulenta* with *C. guatemalæ*, in the absence of specimens we could only refer the Panama bird called by the same name to *C. guatemalæ* also.—ED.]

The 'Zeitschrift f. d. gesammten Naturwiss.' of Halle, for October 1870, contains an account of the forthcoming publication by Professor Giebel of an important ornithological work, to be entitled 'Ornithologischer Thesaurus.' The MS. would appear to be in a forward state; and the general object of the work is not only to improve upon Mr. G. R. Gray's useful lists, but also to treat of the systems of arrangement of families, genera, and species. The habits of birds, their distribution and anatomy, will also be touched upon; nor will extinct and fossil forms be neglected. Prof. Giebel regrets the growth of "species-making," which is daily rendering the study of ornithology more difficult; but we are disposed to attribute the system quite as much to the inherent intricacies of the subject as to the love which some ornithologists evince for the minute subdivision of so-called species. Should the 'Ornithologischer Thesaurus' fulfil the expectations held out in the notice given of it, it will doubtless be a most valuable work.

Mr. Stevenson's subject grows in his hands, and the second volume of his 'Birds of Norfolk' only brings him to the end of the *Grallæ*—a fact not so very astonishing when it is considered that more than forty pages are devoted to the account of one species, the Great Bustard; but then it must be acknowledged that never, probably, was the history (in the literal sense of the term) of any species of British bird so completely given; for, though ostensibly limited to recounting the sad story of the extinction of that noble species in East Anglia, the author's unwearied diligence of research and somewhat discursive genius lead him to wander into giving many details respecting it, not only in other parts of England, but also in foreign countries. Mr. Stevenson is certainly to be congratulated on having obtained so much information respecting it from our predecessor and his brother, Mr. E. Newton, who, more than twenty years ago, began collecting materials for a complete monograph of the Bustard, and, so far as regards its former occurrence in the counties of Norfolk and Suffolk, must nearly have exhausted the supply. Other species are dwelt upon in detail, only inferior in interest to *Otis tarda*; but we cannot afford space to notice them further. We have only to remark that Mr. Stevenson's second volume fully sustains the reputation acquired by the first, and the encomiums passed upon that (Ibis, 1867, p. 238) are equally merited by this.

Mr. Sclater tells us that he has received letters from Dr. Adolf Bernhard Meyer, from Menado, in Northern Celebes, dated 24th Nov. 1870. Mr. Meyer, after announcing his safe arrival, states that he finds Menado so favourable a centre for prosecuting his zoological researches that he proposes to make it his head quarters during his stay in the East.

One of our Members, Mr. F. Godman, has recently started on a visit to Madeira and the Canary Islands. He proposes to spend a few months there and to devote himself almost entirely to investigating the bird-fauna of those islands.

Mr. Swinhoe, after his short holidays, is on the point of returning to his duties. On his arrival he will reside at Ningpo, a place to which he has only paid a passing visit during his previous sojournings in China.

THE IBIS.

THIRD SERIES.

No. III. JULY 1871.

XXI.—*Additional Notes on Birds of the Territory of the Trans-Vaal Republic.* By Thomas Ayres. (Communicated by John Henry Gurney.)

[Continued from page 157.]

(Plate IX.)

107. (L. 371.) Philetærus socius (Lath.). Social Grossbeak.

I first met with this curious bird near the Vaal river, where there were several colonies amongst the large Camel-thorn trees. Their huge nests were very conspicuous at a considerable distance; I first saw them in July, 1869 (midwinter), when the birds, in flocks of from thirty to forty, were still inhabiting their nests, in which they appear to sleep all the year round, adding to them each summer as the colony increases. I visited a nest early one morning and found it apparently deserted; but on throwing a stone or two at it, I heard a gentle chattering, and presently out flew a bird, and then another, and another, till the whole family were out. I found them afterwards feeding on the ground at some little distance; on rising they uttered the same chattering note, and continued it during their flight.

The nests are very irregular structures, varying in size from a wheelbarrowful to a large cart-load of coarse sticks and grass, the mass forming a very thick and weatherproof roof, in the substance of which the separate chambers are formed. The number of these varies according to the extent of the colony. The apertures of the chambers face downwards, and are barely large enough to admit a man's hand.

There is no connexion between the chambers; and each of them is warmly lined with feathers. In February, being again in the district inhabited by these birds, I cut a nest or two down and found the young birds mostly flown. One chamber only contained callow young and a single unhatched egg, greyish white, indistinctly mottled with sepia-brown. There were several nests on one tree, each three or four feet in diameter.

108. (L. 357, 359 part., 364 part.) HYPHANTORNIS MARIQUENSIS (Smith). Mariqua Weaverbird.

[Mr. Ayres has recently forwarded from Trans-Vaal several males of this bird in nesting-plumage, which agree with the example figured in 'The Ibis,' 1868, p. 466, pl. 10, where Mr. Ayres's observations on this species are also given. From the measurements recorded by Sir A. Smith, in the 'Illustrations of the Zoology of South Africa,' of the species to which he gave the name of "*Ploceus mariquensis*," it seems clear to me that the bird which he figured at Plate 103 of that work is the winter plumage of the species represented in the figure in 'The Ibis' above referred to, and not of the closely allied but smaller race, *Hyphantornis cabanisi*, as suggested by Drs. Finsch and Hartlaub at page 867 of their work on the 'Birds of East Africa.' I do not think that this species is really distinct from the slightly larger race found at the Cape Colony, to which Mr. Layard has applied Latham's specific name *capitalis*. This last name should, I think, be extinguished, as Latham's description is so meagre, and his plate so unsatisfactory, that it is impossible to be certain to which of the nearly allied species of this genus they are intended to apply.—J. H. G.]

109. (L. 359 part., 364 part.) HYPHANTORNIS VELATUS (Vieill.). Damara Weaverbird.

Sex of specimen uncertain. Total length $5\frac{1}{2}$ inches, bill $\frac{10}{16}$, wing $2\frac{3}{4}$, tail 2, tarsus $\frac{13}{16}$; iris dusky.

[Mr. Ayres has only forwarded one example of this Weaverbird from the Trans-Vaal, which is evidently either a female or a male in winter dress. It is the only specimen I have seen from any locality, except Damara Land, where this species appears entirely to take the place of its larger congener *H. mariquensis*, being always intermediate in size between *H. mariquensis* and *H. cabanisi*. The males of *H. velatus*, when in breeding-dress, are somewhat brighter in the yellow tints of their plumage than those of *H. mariquensis*; in other respects they are similar.—J. H. G.]

110. (L. 354.) TEXTOR ERYTHRORHYNCHUS, Smith. Red-billed Black Weaverbird.

Female:—Total length $9\frac{1}{2}$ inches.

This Finch inhabits the bush, and is not, so far as I know, ever found in the open country; we met with but few of them, and then always in company with the little blue Hoopoe (*Irrisor cyanomelas*) in twos and threes. The stomach of the bird sent contained insects; but berries, seeds, and fruits were not to be had at that season, our trip being in midwinter.

111. (L. 369.) EUPLECTES ORYX, Swains. Greater Bishop Weaverbird.

[In comparing specimens sent from Trans-Vaal by Mr. Ayres with examples from the Cape, they appeared to be identical, and therefore referable to the larger race, *E. oryx*, instead of to the smaller, *E. sundevalli*, to which I assigned them (Ibis, 1868, p. 465).

I think that Mr. Layard is probably correct in treating these two races, in his work on the Birds of South Africa, p. 185, as not specifically distinct.—J. H. G.]

112. (L. 370.) PLOCEUS SANGUINIROSTRIS (Linn.). Sanguine-billed Weaverbird.

Total length $4\frac{3}{4}$ inches, wing $2\frac{10}{16}$, bill $\frac{9}{16}$, tarsus $\frac{13}{16}$, tail $1\frac{1}{2}$; iris greyish hazel, eyelids scarlet, tarsi and feet pale rufous, bill dark glossy pink.

These birds, which vary very much in plumage, are tolerably common in Potchefstroom and the neighbourhood in summer, associating freely with the flights of the preceding species, which swarms here. It feeds with them on the open grassy plains and corn-fields, principally on small grass-seeds which they pick up from the ground.

113. (L. 372.) Plocepasser mahali, Smith. Mahali Weaverbird.

Total length $6\frac{3}{4}$ inches, bill $\frac{12}{16}$, tarsus 1, wing 4, tail 3; iris dark red; sexes very similar in plumage.

These birds are common throughout the bush, but are not seen in open country; they are gregarious, and have a chattering note, which gives the idea of sociability. Several build together in the same tree. We found plenty of old nests on our late journey to the Limpopo; they were very rough structures, made up of grass, with the long ends sticking out in every direction, and formed like retorts, with two short necks hanging down, and with so small a flat surface inside for the eggs to lie on, that I cannot understand how it is they do not always roll out at one end or the other, especially as the nest is built or hung on the outer twigs of the spreading Mimosas, and is very liable to be shaken by the wind.

114. (L. 394.) Estrelda granatina (Linn.). Granadine Finch.

Male:—Total length 6 inches, bill $\frac{7}{16}$, tarsus $\frac{11}{16}$, wing $2\frac{1}{4}$, tail 3. *Female*:—Total length $5\frac{1}{2}$ inches; iris red, bill bright bluish scarlet, tarsi and feet dusky.

The first of these pretty birds which I met with I shot in the Mariqua district, amongst som every thick cover; and I afterwards found them plentiful all along the Limpopo: they are generally in pairs, but sometimes three or four may be seen together.

All the *Estreldæ* are pretty nearly alike in their general movements, and eat similar food.

115. (L. 389.) Estrelda erythronota (Vieill.). Black-cheeked Finch.

Male:—Total length 5 inches, bill $\frac{6}{16}$, tarsus $\frac{10}{16}$, wing 2, tail $2\frac{6}{16}$; iris red.

I only met with these Finches on the Limpopo, amongst the low scrub which abounds there in some parts. They were found in companies.

116. (L. 393.) Estrelda squamifrons (Smith). Scaly-feathered Finch.

Total length 4 inches, bill $\frac{6}{16}$, tarsus $\frac{9}{16}$, wing $2\frac{1}{4}$, tail $1\frac{3}{4}$.

These curious little birds are gregarious, but not common in the districts I visited; I found them on the Limpopo, but never in the open country. When seen they were actively hopping about the low thorn bushes; and in March last I found them building amongst similar bushes about the Hartz river. The nest is placed amongst the thorny twigs of the bush, a few feet from the ground, and is composed outwardly of thin grass stalks, the ends roughly protruding in all directions; it is thickly and very warmly lined with the soft silky down of a species of *Asclepia*, and is of much the same shape as the nest of *Estrelda astrild*, but with a more prolonged entrance, which gives the nest the appearance of a retort placed horizontally in the bush, with the neck inclining slightly downwards. The eggs are five in number, of a greenish white, much blotched with umber-brown, especially towards the thicker end, and sometimes much marked with brown lines.

117. (L. 387.) Estrelda minima (Vieill.). Amadavat Finch.

Total length $3\frac{3}{4}$ inches, bill $\frac{6}{16}$, tarsus $\frac{9}{16}$, wing 2, tail $1\frac{7}{16}$; iris red, bill red, dusky on the ridge.

This tiny bird is found in small companies, but cannot be called plentiful. The females far exceed the males in number. The note is soft but guttural.

118. (L. 444.) Crithagra chrysopyga, Swains. Golden-rumped Grossbeak.

Male:—Total length $4\frac{5}{8}$ inches, bill $\frac{6}{16}$, tarsus $\frac{9}{16}$, wing 2, tail $1\frac{13}{16}$; iris dusky, upper mandible of bill dusky, under mandible pale, tarsi and feet light ash-colour.

Of this species I only found one company, consisting of five individuals, which I met with amongst the low thorns in the Mariqua district.

[This species seems to me to be certainly distinct, notwithstanding the high authority to the contrary of Drs. Finsch and Hartlaub, who at p. 455 of their recent work on the 'Birds of East Africa' treat it as simply a race of *C. butyracea*, not entitled to specific separation.—J. H. G.]

119. (L. 407.) Passer diffusa, Smith. Southern Grey-headed Sparrow.

Male:—Total length $6\frac{1}{4}$ inches, bill $\frac{8}{16}$, tarsus $\frac{12}{16}$, wing $3\frac{1}{4}$, tail $2\frac{1}{2}$.

During our visit to the bush, we met with this Sparrow, though but sparsely. It feeds upon grass-seeds; and its note resembles the "chissick" of the common English Sparrow.

[I agree with the opinion expressed by Mr. Sharpe (P. Z. S. 1870, p. 143) as to the specific distinctness of this Sparrow.—J. H. G.]

120. (L. 422.) Pyrrhulauda australis, Smith. Southern Finch Lark.

I found two nests of this bird, one in March, the other in April; each nest contained only two eggs, which, in one instance, were somewhat incubated.

One of these nests I found at Mamusa, on the Hartz river, the other near Bloemhoff, on a tributary of the Vaal river.

The nest of this species is placed on the ground under shelter of a clump of weed or grass. It is roughly constructed of coarse grass, slightly lined with fine roots; both the nests which I found were situated within twenty yards of water.

The egg is white, much spotted with light sepia-brown.

121. (L. 420.) Pyrrhulauda smithi, Bon. Smith's Finch-Lark.

Total length $5\frac{1}{8}$ inches, bill $\frac{8}{16}$, wing $3\frac{1}{8}$, tarsus $\frac{3}{4}$, tail $1\frac{3}{4}$.

We found these birds frequenting the open glades along the banks of the Limpopo in companies consisting of sometimes as many as fifty individuals. They were feeding on grass-seeds after the manner of Finches.

[I have followed Drs. Finsch and Hartlaub (Birds of East Africa, pp. 467, 468) in treating this species as distinct from its more northern ally *P. leucotis*.—J. H. G.]

122. (L.410.) Fringillaria flaviventris (Vieill.). African Yellow-bellied Bunting.

Male:—Total length 6 inches, wing $3\frac{1}{4}$, tarsus $\frac{3}{4}$, tail $2\frac{3}{4}$.

We found this species rather common in some parts adjoining the Limpopo; its flight and habits are those of a Bunting.

123. (L. 412.) FRINGILLARIA IMPETUANI, Smith. South African Lark-like Bunting.

Total length $5\frac{1}{2}$ inches, bill $\frac{7}{16}$, wing $2\frac{7}{8}$, tail $2\frac{3}{8}$.

I have only obtained one specimen of this Bunting, which was procured in the bare open country.

124. MEGALOPHONUS NÆVIUS, Strick. Dark-streaked Lark.

Male:—Total length 6 inches, bill $\frac{11}{16}$, wing $3\frac{5}{8}$, tarsus $\frac{5}{16}$, tail $2\frac{1}{4}$; iris very light brown, bill, upper mandible dusky, under mandible pale, tarsi and feet pale.

I found these Larks in the Mariqua district, frequenting the open glades at the commencement of the thicker bush, but in the latter I did not notice them. When disturbed, they generally flew from the ground on to the nearest bush.

[I have examined, in the Museum of Zoology at Cambridge, the type specimen of *Alauda nævia* of Strickland (Contr. to Orn. 1852, p. 152), and find it identical with Mr. Ayres's Trans-Vaal specimen.—J. H. G.]

125. (L. 431.) MEGALOPHONUS CHENIANUS (Smith). Latakoo Lark.

Total length $5\frac{1}{2}$ inches, bill $\frac{8}{16}$; iris dark brown.

This species is found in the Mariqua district, where bush and glade are pretty equally distributed.

126. (L. 428.) MEGALOPHONUS PLANICOLA, Licht. Plain-loving Lark.

Total length $7\frac{1}{2}$ inches, bill $\frac{14}{16}$, tarsus $1\frac{1}{5}$, wing $3\frac{7}{8}$, tail 3; iris light hazel, upper mandible dusky, under mandible pale, tarsi and feet pale.

These Larks frequent principally the open country, and are tolerably plentiful to the west of Potchefstroom, between the Hartz and Vaal rivers. They are found singly or in pairs, and are fond of sitting on any low bush to sun themselves, at the same time uttering a rather loud whistle, pretty constantly repeated.

127. (L. 447.) COLIUS ERYTHROPUS, Gmel. White-backed Coly.

I met with these Colies in pairs in February, in lat. 27° 30′, and long. 26°, but found no nests. They do not occur about Potchefstroom.

128. BUCEROS FLAVIROSTRIS, Rüpp. Yellow-billed Hornbill.

Male:—Total length 21 inches, bill 3½, tarsus 2, wing 8½, tail 8½; iris tawny yellow, bare skin round the edge dark pink, bill bright yellow with brown margins.

This Hornbill feeds principally on fruits; it is tolerably plentiful throughout the bush-country, and is mostly found in small companies.

129. (L. 455 & 457.) BUCEROS NASUTUS, Linn. Nasique Hornbill.

Immature:—Total length 18 inches, bill 2¾, tarsus 1¼, wing 8, tail 8¼; upper mandible tawny white, except the tip, which, with the lower mandible, is reddish brown.

This species is common along the Limpopo; and I have also received it from the Megaliesberg, a range of wooded mountains about seventy miles from Potchefstroom.

Like the preceding species, this Hornbill is a fruit-eater, lives in small companies, and has a dipping flight.

I was much surprised to find one of these birds, perched on the top of a tall tree, singing very prettily, with the voice of a Thrush; I could scarcely believe my ears until I had watched the bird for a considerable time; at last he flew away and the woods were again silent.

130. (L. 469.) TRACHYPHONUS CAFER (Vieill.). Le Vaillant's Barbet.

Male:—Total length 9½ inches, bill $1\frac{5}{16}$, tarsus 1¼, wing 4¼, tail 3½; bill pale green; stomach contained insects and fruits.

The specimen sent is the only one I have met with; it was shot by a friend amongst the trees on the banks of the Limpopo, and appears to have been solitary.

[This specimen is the original of the beautiful plate of this species recently published by the Messrs. Marshall in their monograph of the *Capitonidæ*.—J. H. G.]

131. (L. 463 & 464.) LAIMODON LEUCOMELAS (Bodd.). Red-fronted Barbet.

Total length 6 inches, bill $\frac{13}{16}$, tarsus $\frac{14}{16}$, wing $3\frac{1}{8}$, tail $1\frac{7}{8}$; iris dusky, bill black.

These birds appear to feed entirely upon fruits, and are by no means common with us; they principally inhabit thorn trees.

132. (L. 471.) DENDROBATES NAMAQUUS, Licht. Double-Moustache Woodpecker.

[Mr. Ayres forwarded a female of this species, but without any notes as to its habits.—J. H. G.]

133. (L. 499.) OXYLOPHUS MELANOLEUCUS (Lath.). African Black and White Cuckoo.

The specimen sent, a male, was shot at Potchefstroom.

134. CENTROPUS SENEGALENSIS (Linn.). Senegal Spur-heel Cuckoo.

I shot the specimen sent amongst some dense underwood on the Limpopo; it was the only one I saw.

135. (L. 511.) TURTUR SENEGALENSIS (Linn.). Laughing Dove.

These Doves are common in the Mariqua district; and many may be seen together hunting for wheat or other grains amongst the chaff and straw on the threshing-floors of the farms in the neighbourhood of the bush.

I have found but one nest of this bird, the egg from which I now send; it is pure white, rather glossy, and equally obtuse at either end. The nest was composed of a few twigs, and placed on the horizontal branch of a low thorn tree growing on the banks of a stream.

136. (L. 508.) ŒNA CAPENSIS (Linn.). Long-tailed Cape-Dove.

This species is generally distributed throughout the whole country.

137. (L. 526.) FRANCOLINUS LEVAILLANTI, Temm. Le Vaillant's Francolin.

These birds breed amongst rough grass in dry situations, but not far from water; the eggs are spotted throughout with dark brown on a rather dark tawny ground. It is rather a short egg, abruptly pointed at the small end. Size $1\frac{7}{16}$ by $1\frac{1}{16}$ inch.

[Mr. Ayres did not forward a skin of this Francolin, but transmitted its eggs to the Rev. H. B. Tristram, who informs me that they agree exactly with some which he had previously received from Mr. Layard.—J. H. G.]

138. (L. 532.) COTURNIX HISTRIONICA, Hartl. Harlequin Quail.

Total length $6\frac{1}{2}$ inches, bill $\frac{9}{16}$, tarsus $1\frac{2}{16}$, wing $3\frac{5}{8}$, tail $1\frac{1}{4}$; iris dark hazel.

The two specimens sent were shot by me in the open glades along the banks of the Mariqua river, the only place where I have met with them. Their flight resembled that of *C. dactylisonans.*

139. (L. 538.) PTEROCLES VARIEGATUS, Burch. Variegated Sand-Grouse.

Female:—Total length $10\frac{1}{4}$ inches, bill $\frac{8}{16}$, wing $6\frac{1}{2}$; bare skin round the eye ashy, bill black.

I found these birds tolerably plentiful in June and July along the Limpopo and Mariqua; but though they were often in pairs I did not succeed in finding their eggs. These and the other Sand-Grouse of this district are dry and very tough if cooked fresh, but if kept for nearly a week become tender and well flavoured.

140. (L. 535.) PTEROCLES TACHYPETES, Temm. Namaqua Sand-Grouse.

Female:—Length $10\frac{1}{2}$ inches, bill $\frac{9}{16}$, tarsus 1, wing $7\frac{1}{4}$, tail $3\frac{1}{2}$; iris dusky, eyelid yellow, bill ash-colour, feet light ash-colour.

I shot the first of these birds on 10th May, on bare open country between Potchefstroom and Marico, and subsequently found them, though not very plentifully, throughout the whole of my journey along the river Limpopo. When approached they do not run, but squat close to the ground until they think it prudent to be off, when they rise with a noisy rapid beat of their wings. Their flight, like that of other Sand-Grouse, is extremely rapid.

141. (L. 546.) Eupodotis ruficrista (Smith). Rufous-crested Bustard.

Male:—Total length 19 inches; iris dark brown, upper mandible of bill dusky, under mandible pale yellow.

I met with these Bustards, but not plentifully, throughout the Marico bush; they appear to be solitary in their habits, lie close, and rise very silently. In the evening they utter a melancholy note, "goo, goo" often and slowly repeated. When I first heard this note, I thought it must be that of some Owl; but on cautiously approaching, up flew a fine cock Bustard, the skin of which I now send.

142. (L. 555.) Glareola nordmanni, Fischer. Black-winged Pratincole.

This species is occasionally plentiful about Potchefstroom, but at uncertain intervals. Large flights occurred in that neighbourhood last February.

143. (L. 552.) Cursorius bicinctus, Temm. Double-banded Courser.

These birds frequent open ground, and are to be found, though not plentifully, about six miles from Potchefstroom down the Mov iriver, and thence right away down the Vaal.

144. (L. 554.) Cursorius chalcopterus, Temm. Bronze-winged Courser.

I obtained a single specimen in January, on the banks of the Rhinoster river.

145. (L. 570.) Eudromias asiaticus (Pall.). Caspian Dotterel.

Male:—Total length $8\frac{1}{4}$ inches, bill $1\frac{1}{16}$, tarsus $1\frac{3}{4}$, wing $1\frac{5}{8}$, tail $2\frac{1}{2}$; iris dusky, bill black, tarsi and feet yellowish ash-colour.

One day as I was trudging down to the river, to have an afternoon's fishing, I found four of these Plovers on the open flats outside Potchefstroom. They had somewhat the appearance of Burchell's Courser when on the ground, but did not run so fast. They ran and then suddenly stopped, with their bodies horizontal, ready for flight, and, being much the colour of the ground, were not easily seen. They uttered a short "chuck" whilst rising. I bagged two at one shot. On a subsequent occasion I saw two others, which I did not obtain.

[Both specimens sent were in the non-breeding plumage usual in South-African examples of this Plover.—J. H. G.]

146. (L. 575.) BALEARICA REGULORUM (Licht.). Southern Crowned Crane.

Male:—Total length 42 inches, bill 3, tarsus 9, wing 22¼, tail 10¼; iris light ash-colour, bill black, tarsi and feet black.

These handsome Cranes are generally, though sparsely, distributed over the country, and have much the same habits as the Stanley Cranes, with which they occasionally associate, as flocks of each may be seen feeding together on the banks of the Vaal river below Bloemhoff.

[A supposed nest of this Crane which contained five white eggs was recorded by me on the authority of Mr. Ayres in 'The Ibis' for 1868, p. 256; but a subsequent note by Mr. Layard in 'The Ibis' for 1869, p. 376, seems to render it doubtful whether these eggs were correctly identified; and further facts as to the nidification of this species are therefore desirable.—J. H. G.]

147. (L. 580, L. 582.) ARDEA ARDESIACA, Wagl. Lesser African Schistaceous Heron.

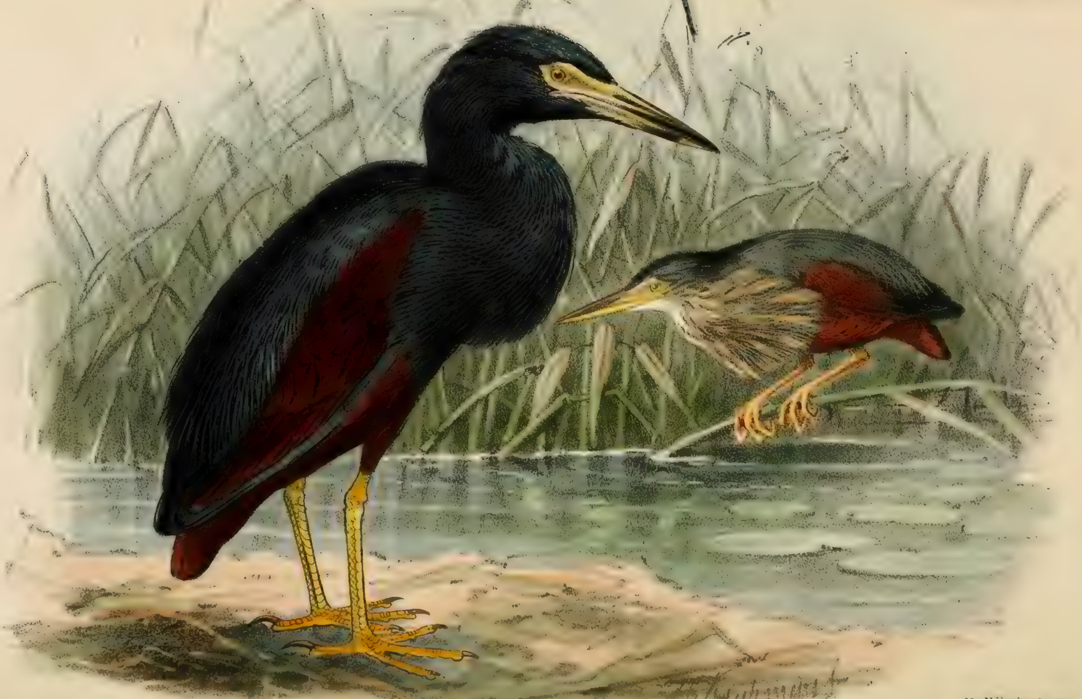
Male:—Total length 20 inches, bill from gape 3, tarsus 3¼, wing 9½, tail 3; bill black, tarsi and feet dark greenish-yellow, bare parts of thighs ashy.

I have only obtained two specimens of this Heron, one of which was shot by my brother in April 1869, in the swamp near Potchefstroom, and the other was also shot by a friend of mine in the same locality.

The flight of this species somewhat resembles that of *Ardea purpurea*.

[There can, I think, be no doubt that *Ardea flavimana* of Sundevall, as well as *Ardea calceolata* of Du Bus, are synonymous with this species; the descriptions of Du Bus and of Sundevall, and the plate given by the former author, agree well with the specimen obtained by Mr. Ayres in April 1869, except

Ibis.1871 Pl IX



J G Keulemans lith

M & N Hanhart imp

that the latter has the throat and chin of a rufous maroon colour, which is probably the remains of the immature dress, as the other specimen sent by Mr. Ayres, the sex of which was not ascertained, but which bears the appearance of being a younger bird, has the whole of the under plumage from the chin to the under tail-coverts inclusive, and also the thighs, more or less tinged with rufous maroon, interspersed with a few worn feathers of a whitish hue, and especially white on the shaft. Both the maroon tint and the intermingled white plumage are especially noticeable in this specimen, on the lower part of the front of the neck, where some of the lanceolate feathers are schistaceous on their outer, and rufous on their inner webs.—J. H. G.]

148. Ardea rufiventris, Sundev. Rufous-bellied Heron. Plate IX.

Male:—Total length 19½ inches, bill 3, tarsus 2¼, wing 8¾, tail 3¼; iris bright yellow, feet and bare part of the thighs yellow, tarsi pale, basal half of the bill nearly white, the remainder black, with the tip of the under mandible yellow, bare skin round the eye pale yellow.

Female:—Total length 19 inches, bill 2¾, tarsus 2¼, wing 8, tail 2¾; iris yellow, bill yellowish, upper mandible dusky brown, skin round the eye yellow.

These Herons are shy and exceedingly scarce here; three or four are sometimes seen together. They fly rapidly, and settle on the reeds. The stomachs of those sent contained frogs.

[As this rare and beautiful Heron has, I believe, never been figured, the accompanying plate (Pl. IX.), taken from the pair sent by Mr. Ayres, will be useful in identifying future specimens. I may add that the description of *Ardea semirufa*, Schlegel, as given in the 'Muséum des Pays-Bas,' Ardeæ, p. 35, leads to the belief that it is founded on an individual of the present species.—J. H. G.]

149. (L. 593.) Scopus umbretta, Gmel. Umbrette.

Mr. Layard's description of the nidification of this species is excellent; and I can add nothing to it, except that the inside of the nest is neatly plastered with mud, and that either from this cause, or from the bird's muddy feet, the eggs are often very dirty.

150. (L. 603.) Falcinellus igneus (Gmel.). Glossy Ibis. These birds are scarce in this part of the country, and also very shy and difficult to approach. They frequent swamps, generally in pairs, and on being disturbed circle up to a great height in the air, and then go right away to some other favourite marsh.

151. (L. 605.) Geronticus hagedash (Vieill.). Hagedash Ibis.

This Ibis is very scarce in the Trans-Vaal, the specimen sent was a solitary male, shot by me last December amongst the thorn trees on the banks of the Vaal river.

152. (L. 640.) Gallinula chloropus (Linn.). European Water-Hen.

The specimen sent was shot amongst the rushes on the banks of the river, close to Potchefstroom.

153. (L. 647.) Sarkidiornis africanus, Eyton. African Black-backed Goose.

This Goose I shot last summer at a lagoon on Loup-spruit, about six miles from Potchefstroom. It is the only one I have ever met with; and I had great trouble to get it, as, after being shot, it flew into the spruit, dived, and died on the opposite bank.

154. (L. 651.) Casarca cana (Gmel.). South-African Shell-Duck.

The three specimens sent were killed by my brother on a lagoon in the Free State; but birds of this species also occur on this side the Vaal, where I have seen th[illegible]ut have never been able to get at them.

[Both sexes of this species have an osseous protuberance on the carpal joint, like that in *Chenalopex ægyptiacus*, but covered with feathers.—J. H. G.]

155. (L. 659.) Nyroca brunnea, Eyton. South-African Nyroca Duck.

This species is to be found on the lagoon at Loup-spruit, where a few years since it was plentiful, but has lately become much more scarce.

156. STERNA LEUCOPTERA, Temm. White-winged Tern.

Total length $10\frac{1}{8}$ inches, bill $1\frac{5}{16}$, wing $8\frac{1}{2}$, tail $3\frac{1}{4}$; iris brown, bill black, tarsi and feet bright red.

The specimen sent was a solitary bird shot on 26th June, 1869, whilst hovering over the marsh near Potchefstroom.

[This specimen appears to be an adult bird, partially (but not fully) attired in breeding-plumage. J. H. G.]

157. STERNA FISSIPES, Linn. Black Tern.

This Tern was killed in the month of December, at the lagoon at Loup-spruit, from a large flock which was apparently engaged in catching insects on the wing, and which, after being shot at, wheeled round and round in a body to an immense height, and then sailed away. The flight of these Terns was unsteady, like that of many of the Gulls, as if the wings were too large for the body.

[The specimen sent appears to be a bird of the year. —J. H. G.]

[I add some remarks on Trans-Vaal birds already mentioned in Mr. Ayres's notes, published in 'The Ibis,' for 1869, p. 286 *et seq.*—J. H. G.]

22. TURDUS DECKENI, Cab. Decken's Thrush.

[The Thrush which Mr. Ayres referred to in his notes published in 'The Ibis' for 1869, p. 292, and which I there identified with *Turdus olivaceus*, Linn., proves on closer examination to be *T. deckeni*, Cab.

The true *T. olivaceus* occurs in Natal; but I have not seen it from Trans-Vaal.—[illegible]H. G.]

36. (L. 4[illegible] [illegible]HAGRA FLAVIVENTRIS, Gmel. Yellow-bellied Gross-[illegible].

[At p. 295 of the paper above referred to, is another incorrect identification which I am desirous to rectify. The species there recorded as *Crithagra butyracea*, Linn., is in reality *C. flaviventris*, Gmel.

I am indebted to the kindness of Mr. R. B. Sharpe for the following synonymy of this species, furnished to him by Dr. Finsch:—

Crithagra flaviventris (Gmel.).
,, *flava*, Swains.

Crithagra strigilata, Swains.
„ *butyracea,* Gray et Bp. *nec* Linn.—J. H. G.]

38. (L. 423.) Megalophonus rufipileus (Vieill.). Fasciolated Lark.

Total length $5\frac{3}{4}$, bill $\frac{11}{16}$, wing 3, tarsus $1\frac{2}{16}$, tail $2\frac{1}{4}$; iris light tawny, bill pale, with the ridge dusky, tarsi and feet pale dusky.

These Larks are only found on the open plains, extending from Potchefstroom to the bush at Mariqua; they are generally two or three together, and lie so exceedingly close that they can often be knocked down with a stick.

[*Brachonyx pyrrhonotha,* Smith, and *Alauda fasciolata,* Sundevall, appear to me to be synonyms of this species, which, in 'The Ibis' for 1869, p. 295, I erroneously referred to its nearly allied but more southern congener, *M. apicatus* (Vieill.). I have to thank Mr. E. L. Layard for his kindness in pointing out this error.—J. H. G.]

39. (L. 435.) Certhilauda garrula, Smith. Garrulous Lark.

I found a nest of this Lark at Mamusa, at some little distance from the river; it was placed under a tuft of grass, and was composed of rough grass outwardly, lined with roots of fine grass, and partially arched over with the rough grass of which the outer portion of the nest was constructed. It contained two eggs, one of which was larger than the other; and though I left the nest for two days after finding it, no more eggs were laid.

[The Rev. H. B. Tristram, to whom these eggs were sent by Mr. Ayres, informs me that he believes the larger one to be the egg of one of the South-African Cuckoos.—J. H. G.

48. (L. 537.) Pterocles gutturalis, Smith. Sombre Sand-Grouse.

Female:—Total length $12\frac{1}{2}$ inches, bill $1\frac{2}{16}$, tarsus $1\frac{1}{2}$, wing 8, tail $3\frac{1}{2}$.

I found these birds about the river Limpopo in June; they were in flocks which apparently consisted entirely of females. I killed four out of a flight at one shot, with dust-shot, all of which were hen birds. A few of them were breeding; and I found their eggs, three in number, laid on the bare ground amongst the grass, without the slightest appearance of a nest, at no great distance from the water.

The size of the egg is $1\frac{12}{16}$ inch by $1\frac{3}{16}$; the ground-colour dusky-tawny marked with lines and blotches of umber, especially towards the base of the egg, where these marks form an encircling zone.

49. (L. 536.) Pterocles bicinctus, Temm. Double-banded Sand-Grouse.

Male:—Total length $10\frac{1}{2}$ inches, bill $\frac{11}{16}$; iris dusky, feet yellowish.

Next to *P. gutturalis,* this is the most plentiful of the Sand-Grouse found near the Limpopo.

The greater number of those we saw there in June were in flocks, but some few had paired and were breeding. The eggs, three or four in number, are laid on the bare ground amongst the short grass, and the hen bird will almost allow herself to be trodden on before she will rise.

The size of the egg is $1\frac{6}{16}$ inch by $\frac{15}{16}$; ground-colour brownish-pink, spotted and blotched all over, but more particularly at the thicker end, with a lighter tint of the same colour.

53. (L. 551.) Cursorius rufus, Gould. Burchell's Courser.

This species is common about Potchefstroom, in flocks, in winter.

[I cannot concur in the opinion expressed by Mr. Layard in 'The Ibis' for 1869, p. 375, that this species is identical with *C. senegalensis,* Licht.; the latter is a somewhat smaller bird, with much less white on the secondary feathers of the wing, and with no grey on the occiput.—J. H. G.]

57. (L. 574.) Anthropoides stanleyanus, Vigors. Stanley Crane.

Male:—Total length 47 inches, bill $4\frac{1}{2}$, tarsus $10\frac{1}{2}$, wing 23; iris dusky, bill, tarsi, and feet black.

These Cranes are not at all uncommon in this country. In the summer months they are generally seen in pairs, stalking about the open flats in search of insects; in winter they congregate in certain localities and live sociably together. One of these spots is on the Movi river, about ten miles above its junction with the Vaal river, and another is on the banks of the Vaal river, about twenty miles below Bloemhoff. These birds feed on seeds and roots as well as on insects; and their flesh is not at all bad eating; slices from the breast fried with butter are scarcely to be distinguished in taste from excellent beef. Blue Cranes (as this species is locally called) sometimes rise to an immense height in the air, uttering their peculiar loud guttural note. When on the ground they frequently amuse themselves by dancing round each other with wings extended, bowing and scraping to each other in a most absurd manner, not a little curious to see.

61. (L. 601.) ANASTOMUS LAMELLIGERUS, Temm. African Anastomus.

Female:—Total length $30\frac{3}{4}$ inches, bill 6, wing $15\frac{1}{2}$, tarsus 6, tail $8\frac{3}{4}$; iris double, the inner ring pale yellow, the outer dusky, bill dusky, basal half whitish, and conspicuous when the bird is freshly killed.

This curious bird was shot by my brother on the 6th February, 1869, in a swamp within a mile of Potchefstroom. It was a solitary bird, and before it was shot had been observed several days feeding in the swamp and alighting on the neighbouring trees; its stomach contained all the soft parts of Crabs well broken up. A few days after it was shot, five others were seen to fly over the town at a great height.

This species only occurs as a visitor in this part of the country.

XXII.—*On the* Coraciidæ *of the Ethiopian Region.* By R. B. SHARPE, F.L.S., Libr. Z.S., &c.

[Concluded from page 203.]

Genus 2. EURYSTOMUS.

	Type.
Eurystomus, Vieill. Analyse, p. 37 (1816) . . .	*E. orientalis.*
Colaris, Cuv. Règne Anim. i. p. 401 (1817) . . .	*E. orientalis.*
Cornopio, Cab. & Heine, Mus. Hein. ii. p. 119 (1860)	*E. afer.*

Clavis specierum.

a. macula gulari nulla: corpore subtus concolori.
  a'. major: saturate violaceo-lilacinus .... 1. *glaucurus.*
  b'. minor: rubescenti-lilacinus .... 2. *afer.*
b. macula gulari magna cyanea .... 3. *gularis.*

1. EURYSTOMUS GLAUCURUS.

Le Rolle de Madagascar, Buff. Pl. Enl. 501.

Coracias glaucurus, P. L. S. Müll. Syst. Nat. Suppl. p. 86 (1776, *ex Buff.*).

Eurystomus glaucurus, Gray, Handb. of B. i. p. 76 (1869); Sharpe, P. Z. S. 1870, p. 397.

Coracias madagascariensis, Gm. Syst. Nat. i. p. 379 (1788, *ex Buff.*).

Le Grand Rolle violet, Levaill. Rolliers, pl. 34 (1806).

Eurystomus madagascariensis, Gray, Gen. of B. i. p. 62 (1845); Bonap. Consp. Vol. Anis. p. 7 (1854); Hartl. Faun. Madag. p. 27 (1861); Roch & E. Newt. Ibis, 1862, p. 270; E. Newt. Ibis, 1863, p. 341; Verr. in Vin. Voy. Madag. Ann. B. (1865); Schl. Mus. Pays-Bas, *Coraces,* p. 143 (1867); Grand. Rev. et Mag. de Zool. 1867, p. 354; Schl. & Poll. Faun. Madag. Ois. p. 103 (1868).

Colaris madagascariensis, Cuv. Règne Anim. p. 401 (1817); Reich. Handb. *Merop.* p. 56, t. ccccxxviii. fig. 3200 (1852).

Cornopio madagascariensis, Cab. & Hein. Mus. Hein. ii. p. 119 (1860).

Eurystomus violaceus, Vieill. N. Dict. d'Hist. Nat. xxix. p. 426 (1819); Müller, J. f. Orn. 1855, p. 6.

Colaris violaceus, Wagl. Syst. Av. *Colaris,* no. 1 (1827).

General plumage lilac-brown, beautifully glossed with violet; the least wing-coverts, skirting the edge of the wing, and the greater coverts deep ultramarine, the innermost ones inclining to cobalt; quills black, externally washed with ultramarine, the inner web cobalt on the under surface, the secondaries dusky at the base, the innermost ones lilac-brown, like the scapulars, with which in colour they blend; lower portion of the rump and upper tail-coverts dull cobalt; tail for the most part cobalt, more glossy but not so rich on the under surface, the middle feathers duller and inclining to black, the whole of the feathers black at the tip, forming a broad black bar along the end of the tail; lower portion of the abdomen and under tail-coverts bright cobalt; thighs lilac-brown washed with cobalt; bill yellow; feet brown.

Hab. Madagascar (*Newton, Pollen & Van Dam, Crossley*); Nossi-bé, Nossi-falie (*Verger*); Pemba (*Bojer*); Mozambique (*Bianconi*).

Drs. Finsch and Hartlaub are inclined to consider the present species to be only a large race of *Eurystomus afer*, inasmuch as they find that specimens of the last-named Roller from Gaboon, measuring 11½ inches in length, equal specimens from Madagascar; an example collected by Bojer in Pemba, an island lying off the Zanzibar coast, was scarcely larger than large specimens of *E. afer*; and the bird obtained by Bianconi in Mozambique is also referable to *E. glaucurus*. The measurements given by the above-named authors favour this view; and it would therefore appear that a ruddy *Eurystomus* is widely distributed in Western and Eastern Africa, varying in size according to locality, and reaching its maximum development in Madagascar.

Not having specimens to examine from all the localities necessary for the correct determination of this question, I follow the above-named authors in supposing *E. glaucurus* to occur on the east coast of Africa. Pollen and Van Dam state that the bird inhabits the interior of Madagascar, and only appears on the west and east coasts of the island in *October*, whereas Bojer shot his specimen in Pemba on the 24th of *August*, 1824. If MM. Pollen and Van Dam are right in what they say, it is unlikely that the Pemba bird can be *E. glaucurus*; but their statement is hardly conclusive, and it is more likely that, instead of inhabiting the interior of Madagascar during the season when it was not observed by these naturalists, it really passes the time in Africa and migrates to Madagascar in October. This would account for its occurrence in Pemba, Réunion, and in Mozambique. Thus it may be probable that the large specimens of *Eurystomus* found in Africa are really *E. glaucurus* and not *E. afer*; and I must say that I consider these species sufficiently distinct both as regards colour and size, as exemplified by a series in my own collection.

Messrs. Pollen and Van Dam (*l. c.*) have given a good account of the habits of the Madagascar Roller :—

"We have observed and killed this beautiful bird in Madagascar, especially in the vicinity of the forests of Syrangene. It was more particularly in this locality that we had an opportunity of studying its habits and economy. In Madagascar it inhabits by preference those parts of the country where the natives have cut down and burnt parts of the forest for the purpose of sowing their rice. In these open places these birds may almost daily be seen perched on the branches of a dead tree; and at intervals is heard their loud and disagreeable cry, *sara-roc-roc-roc*. It is for this reason that the bird is known to the Autancars by the name of Sararoc, whilst the Sakalave give it the name of Fitili-rarats, which signifies 'bird of thunder,' because these birds only make their appearance in the western part of Madagascar at the commencement of October, when the hurricanes which usher in the winter or bad season begin. Their flight much resembles that of a Wagtail. In flying they have the habit of often closing their wings against their body, which gives them the appearance of being about to fall. They are often seen gathered in parties on a dead branch, squeezing one against the other; and they seem then as if they were stuck together. These birds nest and lay their eggs in the month of October. We are certain of this, because on one occasion we killed a female ready to lay an egg, and in preparing the skin we found a perfectly developed egg, about the size of that of a Bantam hen, of a pure white colour. At this season the male may be seen caressing the female, in the same way as a Pigeon. Their principal food consists of grasshoppers, crickets, coleoptera, as well as some kinds of fruits and grain. It is wonderful to see with what dexterity this bird darts from a branch on to the insects, which they always catch in full flight. From the quantity they devour daily they must be placed in the category of useful birds. In captivity they eat voraciously cooked rice as well as bananas. We believe that it would be possible to make a charming cage-bird of this Roller; by bringing it up from the nestling, and by cutting part of the ligament of the tongue, it would easily learn to pronounce some words and to whistle little airs. Nevertheless it would never do to allow it liberty; for we were assured that it kills little birds with which it is placed. When one is wounded by a shot, it defends itself with blows of its beak, and, like the Owls, it elevates at the same time the feathers of the head and ears. These birds are very active, and from morn to eve make a great noise with their disagreeable croaking. They live in pairs or in little bands of from six to twelve individuals near the houses of the inhabitants. In the north of Madagascar, as well as on the west and east coasts, they never arrive before the first days of October. At this time they live in pairs, nest, and lay; and it is at this season that they sometimes visit the island of Réunion. It consequently appears that this bird inhabits the interior of Madagascar from the month of May to that of October, while it is found from October to April on the eastern and western sides of the island. Our friend Jules Verger has observed it at the same time of year in the islands of Nossi-bé and Nossi-falie."

The description is taken from a nicely preserved skin in my collection, lately procured in Madagascar by Mr. Alfred Crossley.

2. EURYSTOMUS AFER.

African Roller, Lath. Gen. Syn. p. 86 (1787).

Coracias afra, Lath. Ind. Orn. i. p. 172 (1790).

Eurystomus afra, Steph. Gen. Zoöl. xiii. p. 97 (1826); Gray, Gen. of B. i. p. 62 (1845); Bonap. Consp. Gen. Av. i. p. 168 (1850); Antin. Cat. Ucc. p. 27 (1865).

Eurystomus afer, Gray, Cat. Fiss. Brit. Mus, p. 32 (1848); Strickl. P. Z. S. 1850, p. 216; Hartl. Beitr. Orn. Westafr. p. 17 (1852); Bonap. Consp. Vol. Anis. p. 7 (1854); Hartl. J. f. O. 1853, p. 399; Verr. Rev. et Mag. Zool. 1855, p. 414; Müll. J. f. O. 1855, p. 6; Hartl. Orn. Westafr. p. 28 (1857); Cass. Proc. Phil. Acad. 1859, p. 33; Hartl. J. f. O. 1861, p. 104; Kirk, Ibis, 1864, p. 324; Schl. Mus. Pays-Bas, *Coraces*, p. 142 (1867); Heugl. J. f. O. 1868, p. 322; *id.* Orn. N. O. Afr. i. p. 169 (1869); Gray, Hand-l. of B. i. p. 76 (1869); Sharpe, Ibis, 1869, p. 193; Bocage, Jorn. Acad. Lisb. 1870, p. 339; Blanf.

Geol. & Zool. of Abyss. p. 320 (1870); Finsch, Trans. Zool. Soc. vii. p. 220 (1870).

Coracias africana, Shaw & Nodd. Nat. Misc. xi. pl. 401 (1799).

Le Petit Rolle violet, Lavaill. Rolliers, pl. 35 (1806).

Eurystomus purpurascens, Vieill. N. Dict. d'Hist. Nat. xxix. p. 427 (1819); Bonn. et Vieill. Enc. Méth. ii. p. 872 (1823); Bonap. Consp. Vol. Anis. p. 7 (1854).

Colaris purpurascens, Wagl. Syst. Av. *Colaris,* no. 2 (1827).

Colaris viridis, Wagl. Syst. Av. *Colaris,* no. 5 (1827); Reich. Handb. *Merop.* p. 57 (1852).

Eurystomus viridis, Gray, Gen. of B. i. p. 62 (1845); Bonap. Consp. Gen. Av. i. p. 168 (1850); Hartl. Beitr. Orn. Westafr. p. 17 (1852); *id.* J. f. O. 1853, p. 399; Müll. J. f. O. 1855, p. 7.

Eurystomus rubescens, Vieill. N. Dict. d'Hist. Nat. xxix. p. 426 (1819); Bonn. et Vieill. Enc. Méth. ii. p. 871 (1823); Sw. Birds of W. Afr. ii. p. 112 (1837).

Eurystomus orientalis (nec Linn.), Rüpp. Syst. Uebers. p. 23 (1845); Heugl. Syst. Uebers. p. 17 (1856).

Colaris afra, Cuv. Règne Anim. i. p. 401 (1817); Reich. Handb. *Merop.* p. 56, t. ccccxxxviii. figs. 3201, 3202 (1852).

Cornopio afer, Cab. & Heine, Mus. Hein. Th. ii. p. 119 (1860); Cab. in Von der Decken's Reise, iii. p. 34 (1869).

Adult. General colour pale lilac-brown, with a distinct lilac gloss; the least wing-coverts, bordering the edge of the wing, and the greater coverts deep ultramarine, the inner ones inclining to cobalt; quills black, externally washed with ultramarine, the outer web of the primaries inclining to cobalt; the under surface of the wing greyish black glossed with cobalt; upper tail-coverts dull cobalt; tail silvery cobalt, inclining to white on the inner web, the middle feathers brown washed with blue, the extremities of all the feathers banded with black, more narrowly on the outer ones; under tail-coverts cobalt; iris olivaceous; legs pale yellowish olive; bill deep yellow. (*Blanford.*)

Young. Similar to the adult, but has the underside washed with pale thalassine-blue from the breast downwards, the lower flanks being entirely blue; the wing-coverts pale greyish-brown, and all the rest of the plumage very much duller.

Hab. North Eastern Africa. Abyssinia (*Rüppell, Heuglin*); Bogos Land (*Blanford, Jesse*); Senaar, Fazoglu, Kordofan (*Heuglin*); Gazelle River (*Antinori*). Eastern Africa. Uzaramo (*Speke*); Zambesi (*Kirk*). Western Africa. Senegambia (*Mus. Lugd.*); River Gambia (*Mus. R. B. S.*); Casamanze, Bissao (*Verreaux*); Accra (*Ussher*); Saccondé, Rio Boutry (*Pel*); Gaboon (*Verreaux*); Ogobai River (*Du Chaillu*); Angola (*Toulson, Monteiro*).

Dr. Finsch, in his lately published paper on the Abyssinian collection of Mr. Jesse, writes:—

"The North-Eastern African specimens are larger than Western; but there are intermediate forms in specimens from East Africa, which are also larger, and nearly as big as the Madagascarian *E. madagascariensis*, Gm. The latter has been procured at Mozambique, and seems to be scarcely distinguishable as a species." Verreaux (*l. c.*) notices that the race from Gaboon, although not differing from Senegambian specimens in coloration, is nearly a quarter as large again, but he considers it to be only a larger race.

Hartlaub (*l. c.*) says, "a local race of this species from Gaboon is distinguished by its somewhat brighter colour and by its larger dimensions. I have examined specimens 11½ inches in length." On the other hand Cassin (*l. c.*) remarks that the specimens sent by Du Chaillu from the Ogobai river were "rather smaller than specimens from Sierra Leone." This confirms my impression, hinted at in the account of *E. glaucurus*, that that species occurs in Gaboon, and that its range extends across the continent of Africa, whence it migrates into Madagascar.

In Gaboon, M. Verreaux informs me that the present species is a bird of passage, only remaining to breed, as his hunter had procured young birds newly fledged. It affects marshy places, and feeds on insects, seizing them in flight like a Bee-eater. It is found in little troops of twenty or thirty. They retire to the tops of high trees during the heat of the day and night, always going to the tops of the trees, where they are concealed by the foliage. The female only differs from the male in size; it appears to be a little larger. The young are duller in colour, but assume the brilliant coloration of the adult at the second moult. In the old birds the bill is of a brilliant golden colour, the iris brownish red, and the feet greyish blue.

Dr. von Heuglin observes :—

" This beautiful species is probably not a resident in N.E. Africa. It generally inhabits the wooded country; and we met with it at Sakah, in the Bogos country, in the Abyssinian lowlands, Senar, Kordofan, and on the White Nile. According to Antinori it appears in the Djur country between the middle of April and middle of May. During the rainy season (June to September) we found it commoner in the Bogos country than in any other part of Africa we visited, and procured there in July fledged young.

"In its habits it is very Roller-like, as also in its loud note. It frequents in pairs the dead tops of the high timber along the watercourses and at the edges of open wood, generally higher than the Common Roller. It catches insects from its resting-place with ease, particularly coleoptera and grasshoppers. In spite of its compact figure and heavy appearance, the flight is swift, and it will follow a passing butterfly with great dexterity. In the pairing-season the males are very noisy and quarrelsome, and they often fight in the air, and perform also peculiar aerial evolutions. When not pursued they are not very shy, but when closely followed are very suspicious. Speke procured a female at Uzaramo in October, in which was an egg ready for exclusion."

The following note is extracted from Mr. Blanford's work (*l. c.*). He says it is " a noisy bird, with a swift hawk-like flight, with all the usual habits of a Roller, but keeping rather more to high trees than the two other species, and perhaps rather more given to ' rolling ' from side to side when flying. It often hawks locusts and other insects in the air. *E. afer* was only met with in the subtropical region of the Upper Lebka and Anseba valleys. It there abounded in company with the other two Rollers."

Mr. Jesse's notes on the present species are as follows :—

" Iris dark brown, beak lemon-yellow or chrome-colour. This bird is an active, noisy individual, and during the breeding-season, like the Missel-Thrush at home, drives all intruders from the neighbourhood, even Kites, Vultures, and Eagles. Its flight is singularly rapid and hawk-like, though without, so far as I saw, the characteristic rolling motion observed in that of *Coracias abyssinica* and *Coracias pilosa.* I have seen these birds (*E. afer*) in company with *C. pilosa* and *Caprimulgus inornatus* hawking the ants which fly in the gloaming. It was procured and observed only at Kokai, on the Lebka, and on the Anseba, in July and August, where it was plentiful."

Dr. Kirk (Ibis, 1864, p. 724) found it in the Zambesi to be local, and observed rarely near Teté. Frequent in the river-valley at Chibisa, on the river Shiré. Its habits resemble those of *Coracias caudata.*

My description is taken from a Gambian skin in my collection. Abyssinian examples, of which I have two from Kokai, brought home by Mr. W. Jesse, are a little larger and have stouter bills; otherwise I can see no difference.

3. EURYSTOMUS GULARIS.

Le Petit Rolle violet à gorge bleue, Levaill. Rolliers, pl. 36 (1806).

Eurystomus gularis, Vieill. N. Dict. D'Hist. Nat. xxix. p. 246 1819); Bonn. et Vieill. Enc. Méth. ii. p. 827 (1823); Jard. & Selby, Ill. of Orn. ii. pl. 409; Gray. Gen. of B. i. p. 62 (1845); *id.* Cat. Fiss. Brit. Mus. p. 33 (1848); Bonap. Consp. Gen. Av. i. p. 168 (1850); *id.* Consp. Vol. Anis. p. 7 (1854); Hartl. J. f. O. 1853, p. 400; Verr. Rev. et Mag. de Zool. 1855, p. 415; Müll. J. f. O. 1855, p. 7; Hartl. Orn. W. Afr. p. 29 (1857); Cass. Proc. Phil. Acad. 1859, p. 33; Hartl. J. f. O. 1861, p. 104; Schl. Mus. Pays.-Bas, *Coraces,* p. 143 (1867); Gray, Hand-l. of B. i. p. 76 (1869).

Colaris gularis, Wagl. Syst. Av. *Colaris,* no. 3 (1827); Reich. Handb. Merop. p. 57, t. ccccxxxviii. fig. 3203 (1852).

Cornopio gularis, Cab. & Heine, Mus. Hein. ii. p. 119, note (1860).

Eurystomus collaris, Vig. Zool. Journ. v. p. 273 (1832).

General plumage dark chestnut, with a lilac gloss; least wing-coverts, bordering the edge of the wing, ultramarine, slightly washed with chestnut; primary coverts and most of the greater coverts deep ultramarine; primaries black, externally washed with ultramarine, the inner web cobalt on the underside; secondaries black at the base, but for the most part chestnut, like the scapulars, with which they blend; upper tail-coverts black, slightly edged with cobalt and tinged with rufous; tail-feathers cobalt, inclining to whitish on the inner web; middle feathers black, as also a broad bar at the extremity of the tail and the outer web of the external tail-feathers; chin dark chestnut; throat brilliant cobalt; under wing- and tail-coverts chestnut, like the rest of the body, the latter tipped with black.

Hab. West Africa. Galam (*Verreaux*); Grand Bassam (*Verreaux*); Fantee (*Ussher*); Rio Boutry (*Pel*); Gaboon (*Portman, Gujon, Walker*); Ogobai river (*Du Chaillu*).

By some unaccountable mistake this species of Roller was for a long time considered to be an inhabitant of New Guinea; but it is now well known to be a native of Western Africa only. Here its range seems to be very limited; for it is doubtful if it extends so high as Senegal, which locality is given as one of its haunts by Dr. Hartlaub, who indicates examples in the Leyden Museum as the authority for the statement. In Prof. Schlegel's recently published catalogue, however, no mention is made of Senegambian specimens. The only notice of its habits, that I am aware of, has been published by MM. Verreaux. They state that at Grand Bassam it is only a passing visitant. Its habits are similar to those of the foregoing bird, and it is fond of tumbling in the air. It is rarer than any of the other Rollers, especially in the locality above mentioned, which is not its true home. I have received specimens from Governor Ussher from Fantee, and from Mr. Walker from Gaboon; but not many have come to hand.

My description is taken from a Gaboon specimen, collected by Mr. R. B. N. Walker. The specimens from Fantee are precisely similar.

Subfam. II. BRACHYPTERACIANÆ.

Conspectus generum Brachypteracianarum.

a. Rostrum a rictu mensuratum tarsum superans .... 1. *Brachypteracias.*
b. Tarsus longissimus, rostri longitudinem multo superans ....
  a'. Alæ multo longiores quam cauda .... 2. *Geobiastes.*
  b'. Alæ caudæ longitudinem fere æquantes 3. *Atelornis.*

Genus. 1. BRACHYPTERACIAS.

	Type.
Brachypteracias, Lafr. Mag. de Zool. 1834, pl. 31	*B. leptosomus.*
Chloropygia, Swains. Classif. of B. ii. p. 333 (1837)	*B. leptosomus.*

BRACHYPTERACIAS LEPTOSOMUS.

Colaris leptosomus, Less. Illustr. de Zool. pl. 20 (1832).

Brachypteracias leptosomus, Lafr. Mag. de Zool. 1834, Ois. pl. 31; Gray, Gen. of B. i. p. 61 (1845); id. Cat. Fiss. Brit. Mus. p. 35 (1848); Bonap. Consp. Gen. Av. i. p. 166 (1850); Reich. Handb. Merop. p. 53, t. ccccxxxvi. figs. 3191–92 (1852); Bonap. Consp. Vol. Anis. p. 7 (1854); Hartl. Journ. f. Orn. 1860, p. 83 (1860); id. Orn. Madag. p. 28 (1861); E. Newt. Ibis, 1863, p. 341; Verr. in Vins. Voy. Madag. Ann. B. (1865); Grand. Rev. et Mag. de Zool. 1867, p. 354; Schl. & Poll. Faun. Madag. p. 158 (1868); Gray, Hand-l. of B. i. p. 77 (1869); Sharpe, P. Z. S. (1870), p. 398.

Brachypteracias collaris, Pucher. Rev. Zool. 1846, p. 199.

Chloropygia leptosomus, Swains. Classif. of B. ii. p. 333 (1837).

Head and neck chestnut-brown, everywhere suffused with a beautiful plum-coloured gloss; a parting from the base of the bill up the middle of the head and lores reddish brown, the latter extending backwards over the eye and developing into a slight white eye-brow; cheeks and ear-coverts dark chestnut, spotted and banded with white; back and scapulars dull green, somewhat mixed with brown; lower portion of the back, rump, and upper tail-coverts green, inclining in some lights to cobalt; least wing-coverts, bordering the edge of the wing, green; rest of the wing-coverts brown, everywhere banded at the tip with two lines of dark green, enclosing a rather broader one of white; quills brown, white at the base of the inner web; the primaries externally margined with fulvous, becoming white towards the tip; secondaries broadly washed with fulvous brown on the outer web, and with greenish on the inner web, especially those near the back, which blend with the scapulars; tail for the most part coppery brown, the two middle feathers entirely of this colour and glossed with greenish, all the other feathers with a broad purplish-black band near the extremity, which is white, this latter colour being dashed with violet; feathers of the throat chestnut, the centre of each being much paler and inclining to fulvous towards the tip, which is obscurely white, giving a striped appearance; a broad crescent-shaped band across the breast, extending on each side on to the sides of the neck, white, slightly washed with pale chestnut; upper part of the breast banded alternately with white, chestnut, and black, the latter colour disappearing on the sides of the body, which are banded with chestnut and white only, the flanks tinged with greenish; middle of the abdomen and under tail-coverts creamy white; thighs brown, washed with greenish and narrowly banded with white; under wing-coverts white, slightly mottled with brown; bill horny black, becoming yellowish towards the tip.

Hab. Madagascar (*Crossley*).

I regret to say that nothing is known respecting the habits of this very rare bird. Mr. Crossley informed me that he never actually killed a specimen of it himself, but that the one in my collection from which the above description has been taken, was brought to him by the natives, who informed him that it was a night-feeding bird, and procured its food on the ground. The remains of earth on the bill of the bird in question seemed to vouch for the accuracy of this statement.

Genus 2. GEOBIASTES.

GEOBIASTES SQUAMIGERUS.

Brachypteracias squamigera, Lafr. Rev. Zool. 1838, p. 224; Pucher. Rev. Zool. 1846, p. 193; Bonap. Consp. Gen. Av. i. p. 166 (1850); Grand. Rev. et Mag. de Zool. 1867, p. 354; Schl. Mus. Pays-Bas, *Coraces,* p. 138 (1867); Schl. & Poll. Faun. Madag. p. 158 (1868); Gray. Hand-l. of B. i. p. 77 (1869).

Atelornis squamigera, Des Murs, Iconogr. Ornith. pl. xxxix. (1846); Reich. Handb. *Merop.* p. 53, t. ccccxxxvi. fig. 3194 (1852); Bonap. Consp. Vol. Anis. p. 7 (1854); Hartl. J. f. O. 1860, p. 84; id. Faun. Madag. p. 28 (1861); Verr. in Vins. Voy. Madag. Ann. B. (1865).

Head black down the centre; sides of the head and neck and the breast white tinged with fulvous, and everywhere so mottled with black as to produce a scaly appearance; lores, ear-coverts, cheeks, and throat more distinctly tinged with buff, and not so prominently scaled; a line of black extends from the eye backwards to the nape, and another from the lower part of the eye, below the ear-coverts; back of the neck and upper portion of the back very rich bay; interscapular region olive-green, marked with little silvery bands here and there, this appearance being caused by the tips of some of the feathers being white, with a narrow band of black on each side; scapulars a little brighter green, with a faint indication of a silvery bar here and there; least wing-coverts bordering the edge of the wing dull reddish brown; rest of the wing-coverts olive-green tinged with brown, the external ones marked with fulvous white, the innermost ones barred towards the tip with white, edged with green on each side, and margined with black on the outer edge; primary coverts black; quills black, pale brown towards the tip, the inner web white at the base, the outer web of the 4th, 5th, 6th, and 7th primaries also white, forming a small alar bar; the secondaries outwardly washed with grass-green, the inner ones washed with olive-brown and blending with the scapulars; lower portion of the back and rump grass-green; tail particoloured, greenish at the base except on the outer web, which is cobalt, a broad band of coppery bay extends across the tail, followed by one of black and by another one of pale blue along the extremity of the tail-feathers, the two middle feathers greenish, but tinged with copper-colour towards the extremity of the feathers; lower portion of the breast and belly buffy white, the flanks brownish and everywhere mottled with black and white cross bars; the centre of the abdomen unmottled; under wing-coverts reddish brown mixed with white, and a line of pure white feathers running along the radials; bill dark horny brown; feet pale fleshy brown, yellow at the tarsal joint.

Young. Entirely reddish, but darker on the head, neck, and interscapulary region. On all these parts the feathers are black at the base; but on the chin their basal portion is white. Above the eye and the forehead there are little transverse bands of dark tinged with rufous white, and brown; and a little below the eye there is a small black spot. In the region of the chest the lateral portions are of a rufous colour less pronounced than on the head and upper part of the neck; and on the feathers of the central portion there are bands of white tinged with rufous and brown. On the flanks some, but very few, are coloured in the last-named manner; the rest is smoky brown tinged with rufous. The abdomen is downy white. The coloration of the quills presents nothing peculiar; but the wing-coverts are darker green, more mixed with rufous and brown than in the more adult specimens, and the spot at the apex is composed of two bands, the lower one brownish black, the upper one white tinged with rufous, and encircled above and below with brownish black. The back is deep olive-brown. All over the present specimen the feathers are downy and fluffy; the upper mandible is dark brown, the lower one horny yellow. (*Pucheran, l. c.*)

Hab. Madagascar (*Crossley*).

Nothing has been recorded concerning the habits of this Ground Roller. Mr. Crossley procured the specimen now in my collection from the natives, who said that it was a night-feeding bird like *Brachypteracias*.

Genus 3. ATELORNIS.

	Type.
Atelornis, Pucher. Rev. Zool. 1846, p. 200 .	*A. pittoides.*
Corapitta, Bonap. Consp. Vol. Anis. p. 7 (1854)	*A. pittoides.*

ATELORNIS PITTOIDES.

Brachypteracias pittoides, Lafr. Mag. de Zool. 1834, t. 32; Gray, Gen. of B. i. p. 61 (1845); id. Cat. Fiss. Brit. Mus. p. 35 (1848); Bonap. Consp. Gen. Av. i. p. 166 (1850); Schl. Mus. Pays-Bas, *Coraces*, p. 138 (1867); Grand. Rev. et Mag. de Zool. 1867, p. 354; Schl. & Poll. Faun. Madag. p. 158 (1868); Gray, Hand-l. of B. i. p. 77 (1869).

Atelornis pittoides, Pucher. Rev. Zool. 1846, p. 200; Reich. Handb. *Merop.* p. 53, t. ccccxxxvi. fig. 3193 (1852); Hartl. J. f. O. 1860, p. 84; Hartl. Orn. Madag. p. 28 (1861); Roch & E. Newt. Ibis, 1862, p. 271; E. Newt. Ibis, 1863, p. 341; Verr. in Vins. Voy. Madag. Ann. B. (1865); Sharpe, P. Z. S. 1870, p. 398.

Corapitta pittoides, Bonap. Consp. Vol. Anis. p. 7 (1854), Head very deep cobalt, a little brighter over the eye, and the superciliary feathers minutely spotted with white, developing into a narrow white eyebrow above the eye and over the ear-coverts; lores, cheeks, and ear-coverts deep black; back of the neck and upper part of the back chestnut-brown; lower portion of the back grass-green, somewhat tinged with olive on the upper tail-coverts; wing-coverts bright grass-green, the outer row of the greater coverts washed with cobalt; primary coverts black; quills black, becoming brown towards the tip, white at the base of the inner web, and the basal half of the outer web of all the primaries, except the external one, white, showing a conspicuous alar bar; the secondaries towards the extremity washed with grass-green, the outermost with a slight tinge of blue towards the base, and the innermost tinged with olive-green like the scapulars; all the tail deep cobalt, except the two middle feathers, which are olive-brown; entire throat creamy white, on each side bordered by a triangular patch of cobalt-blue feathers; sides of the neck beyond this blue patch rich bay; breast and flanks bay, duller on the latter; centre of the belly and under tail-coverts creamy white, the latter marked with brown; under wing-coverts whitish tinged with buff; bill black; feet fleshy brown.

Hab. Madagascar (*E. Newton, Crossley*).

Messrs. Roch and Newton (*l. c.*) give the following note:—

"It was getting dark as we approached Alanamasaotra on our journey up, when we saw several of these birds run across the path; one of them was shot by Dr. Roch. On our return we saw one again; but it was only in the dusk of the evening. It is singular that such a brightly coloured species should only appear at nightfall, as it would seem alone to do. They have a very peculiar manner of jerking their tails when they alight on a branch. So far as we observed, they always keep very near the ground, and are probably ground-feeders."

Of this species M. Grandidier observes (*l. c.*):—"This bird lives in the forests, being found generally on the ground and solitary; it has very little strength in its flight, and only perches on the lowest branches."

Mr. Crossley, who sent home a good many specimens of this bird, procured them near Nossi Vola and Saralalan, where it was called by the natives *Vorun Seak.* He gives a note:—"Iris brown. Quite local."

Subfamily III. LEPTOSOMINÆ.

Genus 1. LEPTOSOMA.

	Type.
Leptosomus, Vieill. Enc. Méth. p. 1342 (1823) .	*L. discolor* (♂).
Crombus, Reich. Handb. Merop. p. 51 (1852) .	*L. discolor* (♀).

LEPTOSOMA DISCOLOR.

Cuculus madagascariensis major, Briss. Orn. iv. p. 160, pl. xv. figs. 1, 2 (1760).

Le Grand Coucou de Madagascar, Buff. Pl. Enl. 587, 588.

African Cuckoo, Lath. Gen. Syn. i. pt. ii. p. 332 (1782).

Cuculus afer, Gm. Syst. Nat. i. p. 419 (1788, *ex* Lath.); Lath. Ind. Orn. i. p. 217 (1790).

Cuculus discolor, Herm. Affin. Anim. Tabl. p. 186 (1777).

Le Vouroug Driou, Levaill. Ois. d'Afr. v. pl. 226, 227; Sundev. Kritik om Levaill. p. 49 (1857).

Bucco africanus, Steph. Gen. Zool. ix. p. 25 (1815).

Leptosomus viridis, Vieill. Enc. Méth. iii. p. 1342 (1823); Swains. Classif. of B. ii. p. 333 (1837).

Leptosomus afer, Steph. Gen. Zool. xiv. p. 207 (1826); Bonap. Consp. Gen. Av. i. p. 96 (1850); Hartl. J. f. O. 1860, p. 111; id. Orn. Madag. p. 63 (1861); Verr. in Vins. Voy. Madag. Ann. B. (1865).

Leptosoma afra, Bonap. Consp. Vol. Zyg. p. 13 (1854).

Leptosomus crombec, Less. Traité d'Orn. p. 134 (1831).

Crombus madagascariensis, Reich. Handb. Merop. p. 52, t. ccccxxxv. fig. 3190 (1852).

Leptosoma discolor, Scl. P. Z. S. 1865, p. 682; A. Newt. P. Z. S. 1865, p. 834; Grand. Rev. et Mag. de Zool. 1867, p. 354; Schl. & Poll. Faun. Madag. p. 157 (1868); Gray, Hand-l. of B. i. p. 77 (1869); Sharpe, P. Z. S. 1870, p. 398.

Male. Crown of the head, which has a lanceolate crest, dull plumbeous glossed with metallic green and copper; lores, cheeks, and a collar round the back of the neck cinereous; entire back, scapulars, and least wing-coverts glossy green, tinged everywhere with shining coppery red; greater wing-coverts entirely of the last-named colour; primary-coverts dull bluish green; quills greyish black, the inner web white at the base, the external web glossed with green, as also the secondaries, which have the outer web coppery red like the scapulars; tail greyish black strongly glossed with metallic green and slightly with coppery red; entire under surface cinereous, becoming white on the abdomen and under wing- and tail-coverts; bill dark plumbeous; feet orange-brown.

Female. General colour of the plumage rufous brown, barred on the sides of the head and back of the neck with glossy black; crown of the head for the most part black; entire back brown, spotted with fulvous and everywhere glossed with dull green and coppery red shades; wing-coverts black, spotted with chestnut, glossed with coppery red; quills greyish black, white at the base of the inner web; secondaries barred and margined with chestnut, glossed with coppery red; tail brown, becoming black towards the tip, which is slightly edged with rufous; under surface of the body pale fawn-colour, everywhere spotted with glossy greenish black before the apex of the feather, which is white; bill horn-brown; feet orange-brown.

Hab. Madagascar (*E. Newton, Grandidier, Crossley*); Mayotte (*Pollen and Van Dam*); Johanna I. (*Sclater*).

M. Grandidier (*l. c.*) says that the name given to this species in the Vetsimarak district of Madagascar is *Kiroumbo*, and in the Sakalave district *Tréo-Tréo*, the last name being derived from the melancholy cry that the bird utters. The iris, he says, is clear brown, the feet deep yellow, and the species is found in the north-east, north-west, and south-west parts of Madagascar.

"The Courols" he adds, "live in bands of ten or twelve individuals on the borders of woods. As soon as one of these birds is knocked over with a shot, all the others place themselves at a little distance off or hover round the hunter, so that sometimes one may kill as many as ten in less than a quarter of an hour. The young male has the plumage of the female; and it is on the feathers of the head and on the wing-coverts that the first change in coloration commences."

Messrs. S. Roch and E. Newton write as follows :—

"We saw this bird from near Tamatave up to the end of the forest-country. It has a peculiar habit of playing in the air above the forest for some time over the same place, ascending almost perpendicularly, as it were by a jump, to a great height, and descending again in a curve nearly to the top of the trees, by almost closing its wings, at the same time uttering a whistle so like an Eagle's that it was for a long time doubted by us whether the bird that performed this wonderful freak was not a Raptorial. However, after having several times watched it with our glasses, we satisfied ourselves that it was this species. Whilst one bird was thus playing, another would frequently answer its cry from a tree hard by."

The following habits have been noted by Messrs. Pollen and Van Dam :—

"The natives of the north-west of Madagascar give this bird the name of Cyrombo. It has the curious habit of hovering in the air and uttering a very loud note, striking its wings against its body as it calls. This cry, resembling the syllables *tu-hou, tu-hou, tu-hou,* goes on increasing in force. Nowhere have we found this bird in greater numbers than in the forests in the neighbourhood of the bays of Boény and Jongony in the south-western portion of the island of Mayotte. The racket that they make during the whole journey is truly wearisome. Although very active as criers, these birds are lazy and stupid; as soon as they are perched on the branch of a tree, they remain, so to speak, immovable and in perpendicular position, so that it is easy to see them and knock them over. When seen in this position they look like birds impaled. We suppose that they live in polygamy, because one always sees three times as many males as females; often we have seen three males in company with one single female, and all allowed themselves to be killed one after the other. In fact, when one is killed, the others do not fly away, but content themselves with merely moving from one branch to another. These birds live principally on grasshoppers, but they devour also Chameleons and Lizards, which gives to their flesh a disagreeable odour, like that we observe in the common Cuckoo. In preparing these birds we often found them covered

	REGIO ÆTHIOPICA.																				
	Subregio Abyssinica.				Subregio Mosambicana.			Subregio Capensis.				Subregio Guineensis.								Subregio Madagascariensis.
	Arabia.	N.E. Africa.	Somali Land.	Central E. Africa.	Zanzibar.	Mozambique.	Zambezi.	Natal.	Cape Colony.	Damara Land.	Ovampo.	Angola.	Gaboon.	St. Thomas.	Princes' Island.	Fantee.	Ashantee.	Sierra Leone.	Senegambia.	Madagascar.
1. Coracias garrula		*	*					*	*	*				*	*					*
2. —— nævia		*						*	*	*	*	*							*	
3. —— caudata				*	*	*	*	*	*	*		*								
4. —— abyssinica	*	*											*						*	
5. —— cyanogastra																			*	
6. Eurystomus glaucurus													*?							*
7. —— afer		*		*			*						*			*	*	*	*	
8. —— gularis													*			*	*		*	
9. Brachypteracias leptosoma																				*
10. Geobiastes squamigera																				*
11. Atelornis pittoides																				*
12. Leptosoma discolor																				*

with a species of large parasite of the family of the *Ornithomyiæ*, of a dirty green colour. We were never able to study the propagation of this bird; but while in Mayotte we saw an individual make a nest of rushes in the hole of a great 'Badamier' (*Terminalia cappa*). These birds when they cry puff out the throat so that this portion of the body has the appearance of a pendent bag. When wounded they erect the feathers of the forehead and ears as well as those of the throat, all the while distributing well-aimed blows with the beak. The Cyrombo plays a great part in the chants and religious recitations of the Malagash natives. The French colonists of Mayotte call this bird the 'Parrot.' It is common at Madagascar and Mayotte, and has, according to Mr. Sclater, been found in the island of Anjouan."

XXIII.—*On the Ornithology of Algeria.*

By J. H. Gurney, Jun., F.Z.S.

[Concluded from page 86.]

79. Melanocorypha calandra (Linn.). Calandra Lark.

Occurs in large flocks up to the middle of March. This species is very common at Ain-Oussera and Bougzoul; but I never met with any among the Larks in the Algiers market. It is quite unknown in the Mzab. The underside of the wing, which in the Crested Lark is pink, is black in the Calandra; and this, joined to its large size, renders it conspicuous wherever it is found.

80. Calandrella brachydactyla (Leisl.). Short-toed Lark.

Once seen at Laghouat.

81. Calandrella reboudia, Loche. Reboud's Lark.

Common in flocks about Ain-Oussera.

82. Ammomanes lusitanica (Gmel.): *A. isabellina* (Temm.). Desert-Lark.

At Laghouat and thence as far as Gardaia this inconspicuous bird was met with on bare stony plains, where one would only expect to find Chats, and less commonly on hill-sides. Its habits certainly resemble those of the Chats, except that it perches less on stones, and runs much more; and in particular it bears no resemblance to the genera *Calandrella*, *Alauda*, and *Galerida*, with which it is usually associated. Its flight is far from swift, and often very undulating; as it descends, after poising itself a few moments in the air, its quivering wings bend slightly forwards, and its body seems to sink; but these manœuvres are doubtless confined to the spring. It has a pleasing song, although its notes are weak. Length 5½ to 6½ inches; expanse 12 inches. Food small black and yellow seeds and flies.

83. AMMOMANES REGULUS, Bp.

I only shot one specimen of this species, in the Mzab. It comes exceedingly close to *A. pallida* (Cab.); but I am confirmed in referring it to this species by Dr. Tristram.

84. OTOCORYS BILOPHA (Temm.). Desert Horned Lark.

This was in some respects the most interesting bird which I met with in the course of my rambles; and I regret that I was prevented from bringing home a specimen. It was only met with at Tilremt, halfway between Laghouat and Gardaia.

85. GALERIDA CRISTATA (L.). Crested Lark.

Having, at my father's suggestion, compared Crested Larks from Algiers and Blida with Spanish examples in Mr. Saunders's collection, and others from different parts of Europe, the Algerian bird is found to have darker plumage, a smaller crest, a smaller and differently shaped bill, and a more rufous rump. The black of the tail is also much stronger and deeper.

86. GALERIDA ABYSSINICA, Bp. Abyssinian Crested Lark.

Found in the Sahara, and identified for me by Dr. Tristram.

87. GALERIDA MACRORHYNCHA, Tristr.: *Megalophonus randoni*, Loche. Long-billed Crested Lark.

I first remarked this species at Ain-Oussera (where Capt. Loche obtained it) on the 12th of March, at which time they were paired. It seems to be confined, like the Calandra, to level plains, whereas *Galerida abyssinica* is found in the hills. They walk with the crest up; and when one has been on the ground, I have observed it often look upwards at its mate in the sky, singing as it mounted. Of those I shot, one had been feeding upon caterpillars an inch in length; the gizzard of another glittered with the bright wings of small beetles. There appears to be a sexual difference not hitherto noticed, viz. that the female is smaller than the male, and much darker.

88. Alauda arvensis (Linn.). Skylark.
Common. Mr. Salvin, however, mentions that it is rare in the Salt-lake country. (Ibis, i. p. 314.)

89. Certhilauda desertorum (Stanley). Bifasciated Lark.
A little south of Laghouat.

90. Emberiza miliaria, Linn. Common Bunting.
Common.

91. Emberiza cirlus, Linn. Cirl Bunting.
Not uncommon.

92. Emberiza cia, Linn. Meadow-Bunting.
Seen amongst the hills in the small valleys formed by every stream of water (oftenest near a road); not actually in flocks, but several in the same valley.

93. Fringillaria saharæ, Bp. House-Bunting.
I think every house in Gardaia is tenanted by a pair of House-Buntings. They are equally common in the other Mzab cities. A nest in the inner court at Berrȳan was upon some plaster in a large square hole. It contained one young one, yellow about the gape, and covered with a whitish down. It was a shallow nest, made of the thin twigs of firewood, and lined with hair. The hen generally flew to it from the edge of the opposite wall. I often watched her preening herself. She liked to sit on the edge of something, and let her tail hang down, which, from constant contact with the floor, was very dirty. She usually began by puffing out every feather until she resembled a ball divided by a deep line down the middle of the breast, into which she thrust her beak. When the lower parts were finished, she would preen the back, especially underneath the wing, between the scapular feathers. This is probably the attitude in which

they sleep. Scratching her head with her foot, or scraping her bill against the mortar, concluded her toilet, which occupied from three to five minutes. As I afterwards found other nests, I was able to make further observations. I think the eggs must be deposited in March, as in most instances the young had been hatched off. Judging from the one at Berrȳan, which had flown when I returned to that place on the last day of the month, the young remain in the nest at least twenty-one days. On the 23rd of April I saw a nestling full-grown and able to feed itself, which must have been hatched about the 1st. The eggs are rather like Sparrows' eggs, but rounder. I only got three; Dr. Tristram did not get any; and there are none in the Museum at Algiers. The nest is generally, but not always, placed in a hole, and is composed of twigs or little sticks, and lined with hair, with sometimes the addition of wool or a bit of cotton. On one occasion two were found together, which probably belonged to the same bird, as one of them was unfinished. The young are less noisy than Sparrows. The female brings them food about every ten minutes; and they never chirp except when they see her. I never could detect any thing in her beak, or see on what she fed them, although I watched the operation often; so I do not doubt that she reproduces what she has eaten for the benefit of her callow offspring. Until the young leave the nest the male takes no share in feeding them. The female bears away the fæces. The males sing much the loudest; indeed the females never do more than twitter; but the cock pours forth a lively strain during the season of incubation. They are as tame as Robins. Frequently one would hop upon our carpet, to search for fragments of *couscous*, scrutinizing us within a few feet with his dark brown trustful eye. They are nearly omnivorous. I caught one in a trap baited with grain, and saw another nibbling green carrot-leaf; and once the female, at Berrȳan, made her appearance with a large fly, which was not swallowed without a great effort and after much mastication. They used to drink out of our goatskin, fluttering and clinging to the wall for the moisture which had oozed through. Half circles of accumulated droppings under the rafters showed where they roosted. For a few seconds before settling down for the night I used to see them hovering perpendicularly, with quivering wings and tail brought forward; and this was the only time at which there was any thing characteristic about their flight.

94. PASSER DOMESTICUS (Linn.). Sparrow.

Neither Dr. Tristram nor Mr. Salvin mentions the Common Sparrow; but I found it abundant in the Mzab, at Laghouat, and also in the Tell. I cannot say that I ever saw the Cisalpine, though I examined a great many Sparrows with my telescope and in the market at the Place de Chatres in Algiers.

95. PASSER SALICICOLA, Vieill. Spanish Sparrow.

I shot ten near Blida.

96. FRINGILLA SPODIOGENA, Bp. Algerian Chaffinch.

Common.

97. LINOTA CANNABINA (Linn.). Common Linnet.

Common.

98. SERINUS HORTULORUM, Koch. Serin.

I found the Serin much less common at Blida than at Algiers, where some were seen consorting with Linnets, or singing from the bough of a fir tree, in a low, clear, continuous strain. In winter the notes of two together are like the twittering of a flock of Linnets. Their song being by no means loud, they are much kept as cage-birds.

99. CARDUELIS ELEGANS (Steph.). Goldfinch.

The Goldfinch is quite the commonest bird in many parts of the Tell; it abounds wherever there are thistles. I found a very formidable species of tick on some which I shot at Blida.

100. COCCOTHRAUSTES VULGARIS, Steph. Hawfinch.

At Oued el Alleg and Miliana.

101. CHLOROSPIZA AURANTIIVENTRIS (Cab.). Algerian Greenfinch.

I think that though the extremes of *C. chloris* and *C. aurantiiventris* may be widely different, they run into each other so much that it is impossible to draw the line, and that the latter name will have to sink into a synonym. At Miliana, where they were plentiful and quite tame (often entering within the walls of the town), there were always some dull-coloured individuals in a flock, far duller than many British ones which I have seen.

102. Carpodacus githagineus (Temm.). Vinous Grosbeak.

The favourite resorts of this Grosbeak are gravelly steppes, quite destitute of trees, or rocky ground at the base of the hills where nothing grows except the coarsest grass. In such places its trumpet note may be listened for and generally heard; and the author of the strange cadence be seen running like a *Calendrella reboudia* upon the ground—seldom singly, for the Vinous Grosbeak is gregarious long after it has paired. Seated on the edge of a boulder, I have seen them (in April) apparently feeding one another. They eat the heads of a small green plant and grass-seeds.

The bill is splendid coral-red; and the hairs at the base of the bill are red also in good male specimens.

103. Sturnus vulgaris, Linn. Starling.

Winter visitant.

104. Pica mauritanica, Malh. Algerian Magpie.

Tilremt and Medea. I was several times shown Algerian Jays (*Garrulus atricapillus*) in cages. With regard to *Garrulus minor* (Loche, Cat. p. 52; *id.* Expl. Sc. v. p. 122), it would appear, judging from the type specimen in the Algiers Museum, to be only a small variety of the Common Jay. No second specimen appears to have been obtained; but there is an egg in the Museum.

105. Corvus corax, Linn. Raven.

Breeding in society at Tilremt.

106. Picus minor, Linn. Lesser Spotted Woodpecker.

Wood of Oued el Alleg.

107. Junx torquilla, Linn. Wryneck.

At Bouffarik and, I believe, also at Tilremt.

108. Cuculus canorus, Linn. Cuckoo.

A summer visitant, but less common than in England.

109. Columba palumbus, Linn. Ring-Dove.

Algiers.

110. Columba livia, Linn. Rock-Dove.

Common in the Mzab, and very easy to shoot, and not nearly so difficult to skin as some Pigeons. I almost invariably observed them in pairs on the rocks close to the gardens, but not actually in the Palm trees, where all the Doves were. I observed some dark-coloured varieties among these Cliff-pigeons at Boghari, doubtless caused by domestic ones which had wandered away to breed with them. One specimen was shot which, in the colour of the lower part of the back, approximated to *Columba schimperi.* It was probably the variety which is included in the 'Exploration Sc. d'Algerie,' ii. p. 111, under the title of *Columba turricola* (Bonap.).

111. Turtur auritus. Turtledove.

I found this Dove associating with the next species, but not so numerous; perhaps it was only on passage.

112. Turtur ægyptiacus (Temm.). Egyptian Turtledove.

The Egyptian Turtledove swarmed in the Palm-gardens at Gardaia. Six were sometimes in the crest of one Palm. There were many also in the town, upon the flat roofs of the houses. They have a stiff-necked appearance, from never looking in any direction but downwards. Perhaps from constantly sitting in the underpart of the crest of the Palm they have acquired a habit of always pointing their bills to the earth. They generally sit as close to the stem as possible. They did not appear to me to be in pairs. The natives do not molest them, although they eat their corn—not because Pigeons are sacred, as in some countries (Russia, for instance), but because they do not think them worth powder and shot. When their crops have become distended with food, their flight is slightly heavy; yet it always is graceful; and when high in air, it is as rapid, direct, and powerful as that of the most migratory of its congeners. In merely passing from one house to another, it gathers impetus to ascend two or three feet after its wings have ceased to move (which is always before alighting). This Turtledove coos but little, and not loudly, swelling out the feathers of the breast in the usual way. The iris consists of two circles—one brown, the other speckled grey.

113. PTEROCLES ARENARIUS (Pall.). Sand-Grouse.

The north of the Sahara*.

114. CACCABIS PETROSA (Gmel.). Barbary Partridge.

A friend of mine and two companions killed upwards of 70 brace of this Partridge in one day in Oran. The bird seems never to be found in the plains, and is almost unknown in the Sahara, where I only saw one pair; and Dr. Tristram also met with one covey in the Wed N'ça. They pair in February, and feed on the green leaves of plants. The cock weighs nearly 1¼ lb.; the hen does not weigh quite 1 lb.; she has, besides, no knob on the inner side of the tarsus, and the scapulars are much fewer, and the legs a much paler red than in the cock. The eyelids are orange.

115. COTURNIX COMMUNIS, Bonn. Quail.

Quails would be more plentiful in Algeria if they were not so much sought after. *La chasse* is opened from the 20th of March to the 15th of April, principally for their benefit; and no doubt great numbers are annually killed. I generally found them paired—which surprised me, as they were migrating.

116. TURNIX SYLVATICA (Desf.). Andalusian Quail.

At the Algiers market.

117. HOUBARA UNDULATA (Bp.). Houbara Bustard.

The Arabs trapped me several Houbaras, and once a young Gazelle. The traps are placed among plants called "Calpha." The specimens thus obtained varied in weight from 2½ lbs. to upwards of 3½ lbs. The roots of the feathers are a bright pink, as in some specimens of *Otis tarda*; but I failed to find any trace of the pouch which exists in some males of that species. I brought six eggs home, four of which are now in Prof. Newton's collection. It may be worth mentioning that the English, French, and Arab names for this Bustard are nearly the same. Mr. Drake mentions that "Hobar" is the name for *Otis arabs* in Morocco (Ibis, 1869, 150); and by the natives of India it is given to *Otis macqueeni*, as I learn from Mr. Marshall.

118. OTIS TETRAX, Linn. Little Bustard.

French name, *Poule de Carthage*.

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* The term "Perdrix anglaise" is applied (very erroneously) by French colonists to the Pin-tailed Sand-Grouse (*P. setarius*).

These Bustards fly slowly, with outstretched necks and wings bent upwards, very unlike the last species.

119. Grus cinerea, Bechst. Crane.

One evening at Bougzoul, as I was driving with the master of the caravanserai, we saw eight Cranes marching abreast across the plain in the grey twilight. We guided the cart nearly to within gunshot, when they all ran together, with their heads up, and, without uttering any call, slowly sailed away, to seek safer quarters in the adjoining marsh.

120. Ardea bubulcus, Sav. Buff-backed Heron.

Only one was observed in the Sahara; but at Oued el Alleg upwards of forty were feeding among the cattle. It being February, none of them had buff backs, and at a distance they might have been taken for tame Pigeons. The cows seemed to regard them as the crocodiles of Egypt are said to regard *Charadrius melanocephalus*, of which latter species, by the by, I saw a specimen at Boghari said to have been killed in Algeria.

121. Ciconia alba, Bechst. White Stork.

As early as the 15th of February I noticed a Stork feeding in a marsh at Oued el Alleg (river of leeches), and got within 50 yards. It stooped as it walked, but now and then held its head up boldly. When it flew it stretched its head and neck out to their fullest extent. I was informed that this was the day on which they usually returned to Medea, where a pair were repairing a nest on one of two chimneys at the gable end of a house on the 1st of the following month. The nest was small, and so much exposed to the wind that a mass of sticks had fallen on to the lower roof of an adjoining house; but the instinct of the Storks did not lead them to use this material again. The Stork leaves its nest with a spring, getting quite clear before it ventures to expand its huge wings. It does not draw in its legs, which are so long that they exceed the tail by nearly 12 inches. Its feet appear to touch when it is flying; but when it is just about to alight they are parted widely. Both sexes clap the bill, but never without first throwing back the head.

122. Phœnicopterus antiquorum, Temm. *Phœnicopterus roseus*, Pall. Flamingo.

At Bougzoul an Arab brought me an adult female Flamingo which had only just been killed. The beak would not open to more than 1½ inch. The interior of the upper mandible was almost like whalebone. Iris yellow, red on the outside. It had a brackish smell, and weighed 6½ lbs. A male would perhaps, have weighed more. Expanse 5 feet. Expanse of web 5 inches. Wings not reaching quite to the end of tail. Axillaries bright red, in number 12.

123. ŒDICNEMUS CREPITANS, Temm. Thick-knee.

A fine specimen in the Algiers market about the end of February.

124. VANELLUS CRISTATUS, Meyer. Lapwing.

Dr. Tristram observed that not even a straggler remained in Algeria after March (Ibis, 1860, p. 79).

125. CHARADRIUS PLUVIALIS, Linn. Golden Plover.

Not very common.

126. CHARADRIUS MORINELLUS (Linn.). Dotterel.

Common at Ain-Oussera. Some which were shot on the 13th of March, had just begun to assume the summer plumage.

127. ÆGIALITIS MINOR (Meyer.) Little Ringed Plover.

The Little Ringed Plover was pretty common at Laghouat, generally alone, or at most in pairs, beside smaller and drier "chotts" than its congener the Kentish Plover frequented. Both species run with great celerity on sand or shingle, stopping about every half dozen yards to bow the head, and emitting a shrill whistle. The eye is dark brown, and the eyelids yellow.

128. ÆGIALITIS CANTIANA (Lath.). Kentish Plover.

At Laghouat.

129. TOTANUS OCHROPUS (Temm.). Green Sandpiper.

I only shot one in the Tell; but further south they became common, and they might even be said to be numerous at Laghouat. I cannot help thinking that they breed in Algeria. There were at least twenty couple in the Laghouat marsh up to April 9th, and probably much later. There are, indeed, few trees at Laghouat except Date-palms; but there seems no good reason why they should not sometimes forsake their arboreal habits. Most of them were in pairs; but I admit that is not evidence, as many migratory birds are known to pair "en route." They fly high, with a shrill whistling cry, which is sometimes also emitted on the ground.

130. Totanus glareola, Gm. Wood-Sandpiper.

In the same localities as the last; but whether resident or only on passage, I am unable to say. The legs in this species are of a yellowish olive-colour. They remained in flocks up to the time I left for the Mzab, consorting with the Green Sandpipers. Neither species is shy; but the Wood Sandpiper is the tamer of the two.

131. Totanus hypoleucus (Linn.). Common Sandpiper.

At Laghouat and in the Mzab.

132. Scolopax rusticola, Linn. Woodcock.

In the market at Algiers.

133. Gallinago scolopacina, Bp. Snipe.

Common.

134. Gallinago gallinula (Linn.). Jack Snipe.

In the market at Algiers I saw a Jack Snipe*.

135. Crex pratensis (Bechst.). Corncrake.

I found one about the end of February in the market at Algiers.

136. Porzana maruetta, Leach. Spotted Crake.

At Laghouat; not mentioned by Dr. Tristram or Mr. Salvin.

137. Porzana pygmæa (Naum.). Baillon's Crake.

I shot one at Laghouat. My father remarked that it differed from European specimens in having the throat nearly white.

138. Anas clypeata, Linn. Shoveller.

In the market at Algiers.

139. Anas crecca, Linn. Teal.

At Bougzoul.

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* Dr. Tristram mentions the Stilt (*Himantopus candidus*, Bonn.) as breeding at Laghouat (Ibis, 1860, p. 79); but the Zouaves there, who had a tame one, considered it a great rarity, never having seen such a bird before. Probably since Dr. Tristram's time Stilts have forsaken that place.

140. ANAS ACUTA, Linn. Pintail.

Once in the market.

141. LARUS RIDIBUNDUS, Linn. Black-headed Gull.

As Black-headed Gulls were very numerous in the harbour of Algiers in February, I was surprised to find that they had all left on my return from the Sahara in the spring. I conclude they had gone to Halloula, or some other lake.

Although modern researches have decided that some birds migrate laterally (*i.e.* from south-east to north-west, or *vice versâ*) the majority of our vernal migrants come to England from due south. Hence Northern Africa is peculiarly interesting to the British ornithologist. North even of the great Atlas chain, countless Willow-Wrens and Blackcaps throng every hedgerow. I think it is no exaggeration to say that I saw enough of these two species to account for the multitudes which annually quit Great Britain; but, with a few such exceptions, our birds of passage go further south than the Atlas. Towards the end of April I began to notice *Philomela luscinia, Phylloscopus sibilatrix, Anthus arboreus, Muscicapa atricapilla, Turtur auritus,* restlessly pressing northward. The same birds are migratory in the two countries; and it was interesting to observe how nearly they preserved the same order of precedence *inter se.* The difference in the time of their arrival is in many instances inconsiderable, as will be seen from the following comparative table. It would require a number of observations, extending over a series of years, before we could use such data to get at the speed at which they travel.

	Algeria.	England.
House Martin . .	Feb. 17, 1870.	April 18, 1870.
Swallow	„ 19, „	„ 4, „
Hoopoe	March 13, „	„ 16, „
Tree-Pipit	„ 18, „	„ 4, „
Sand-Martin . . .	„ 22, „	„ 1, „
Sedge-Warbler . .	„ 24, „	„ 21, „
Redstart	„ 27, „	„ 6, „
Nightingale . . .	„ 31, „	„ 8, „
Whitethroat . . .	April 1, „	„ 19, „

	Algeria.	England.
Turtledove . . .	April 11, „	May 18, „
Wood-Wren . . .	„ 23, „	„ 18, „
Spotted Flycatcher .	„ 24, „	June 15, „
Roller	„ 25, „	May 24, „

The above dates for England have been noted in Devonshire, or taken from the 'Field' newspaper by my father, who also informs me that, according to that journal, the Swallow was first observed at Naples on the 28th of March, at Toulouse on the 29th, and at Florence on the 31st.

XXIV.—*Notes on Birds from the Province of Saõ Paulo, Brazil.*

By J. F. Hamilton.

Having spent part of the spring of 1869 in the south of Brazil, and made a small collection of birds from that locality, I think that some notes which I took may not prove uninteresting to the readers of 'The Ibis.'

It may be well in the first place to give some idea of the character of the country. From Santos, the port where I landed, a level space of marshy ground, covered by trees, extends for a distance of about eight miles from the sea. At the end of this the mountain-range or Serra do Mar ascends rather steeply to a height of about 2500 feet, which is the elevation of the greater part of the Province of Saõ Paulo. The Serra is covered by a dense forest, which extends for a distance of about twenty miles from the top; beyond this, for at least forty miles, the country is of a very open character, alternating between undulating campos and small patches of forest; further westward it is more mountainous, and the woods which clothe the Serra extend further from the top. About 100 miles west of Saõ Paulo is the town of Itapetininga; the distance between it and the woods of the Serra is about thirty miles, the country being very open and rather hilly. There is a good deal of partially cleared land at the edge of the forest, bordering on the campos, and also some extent of marshy ground; here the greater part of my collection was formed; a few birds were also procured near Saõ Paulo. The birds mentioned in the following notes, with the exception of *Colaptes campestris*, of which I did not preserve a specimen, have been identified by Mr. Salvin, to whom my best thanks are due.

1. TURDUS LEUCOMELAS, Vieill.

Common about the open campos round Saõ Paulo, especially where there are a few clumps of bushes. I noticed it several times feeding on marshy ground.

2. PARULA PITIAYUMI (Vieill.).

Found at the tops of trees about twenty feet high in the neighbourhood of Saõ Paulo.

3. BASILEUTERUS VERMIVORUS (Vieill.).

Tolerably common, and not at all shy; they will follow any one along a path for a considerable distance, hopping from log to log, and never remaining more than a few seconds in the same place. They do not seem at all to frequent the depths of the forests, but affect the edges of clearings, creeping about among the stems of the fallen trees. I never saw one perched on a tree at any height from the ground.

4. VIREOSYLVIA AGILIS (Licht.).

Tolerably common in the gardens of Saõ Paulo.

5. CERTHIOLA CHLOROPYGA, Cab.

Observed in the Botanical Gardens at Saõ Paulo, creeping about at the tree-tops, and peering into the crevices in the bark and at the bases of leaves.

6. EUPHONIA VIOLACEA (L.).

Two specimens were shot off some low bushes standing in an open space of ground.

7. EUPHONIA PECTORALIS (Lath.).

This species I noticed in bushes, about five or ten feet from the ground.

8. CALLISTE FESTIVA (Shaw).

I met with this species at the top of the Serra south of Saõ Paulo along the line of railroad, and also south of Itapetininga. They were in small flocks at a height of from five to ten feet from the ground, in thick tangled bushes, and were not at all shy, allowing me to procure several specimens out of one flock.

9. TANAGRA CYANOPTERA, Vieill.

Found at the tops of tall trees; also common to the south of Saõ Paulo.

10. TANAGRA ORNATA, Sparrm.

Frequents orange-orchards.

11. TACHYPHONUS CORONATUS (Vieill.).

This bird frequents the thick undergrowth, hopping about among fallen trunks of trees. I have seen them, in company with other small birds, following migratory bands of Ants.

12. SPERMOPHILA CÆRULESCENS (Vieill.).

I procured one specimen from a small flock in the neighbourhood of Saõ Paulo.

13. ZONOTRICHIA PILEATA (Bodd.).

Common in some of the gardens round Saõ Paulo, and also met with about farm-buildings generally throughout the province.

14. PSEUDOLEISTES VIRIDIS (Gm.).

I found this bird common on the open campos a short distance from Itapetininga. They associate in small flocks of about twenty, settling on the ground together and walking about in search of food. I found them often perched upon low bushes about a foot from the ground. They seem generally to prefer being in the neighbourhood of some clump of trees, to which they fly when alarmed, clustering thickly together.

15. APHOBUS CHOPI, Vieill.

I only met with this species in the evening, just before sunset, when a flock usually came and settled on the orange-trees surrounding the house where I was staying; and after remaining there a few minutes, during which time many of them sang very sweetly, they proceeded towards their roosting-place, stopping here and there to rest on any exposed tree, which they often fairly blackened by their numbers.

16. Cyanocorax azureus, Temm.

Found generally at the outskirts of the forests bordering on the open campos. They seem particularly fond of perching on the naked limbs of the Piñon tree, which grows to an immense height, with only a few branches just at the top. In such situations they are frequently to be found towards sunset in company with the Toucan, the harsh notes of the two combined producing a most discordant sound.

17. Leptoxyura cinnamomea (Gm.).

Shot off a Cactus plant growing on the edge of a ditch near Saõ Paulo. There were about a dozen together.

18. Xiphocolaptes albicollis (Vieill.).

Not very common. One that I shot was creeping up the base of a large tree about a foot from the bottom; it had previously been climbing about amongst some fallen logs.

19. Thamnophilus guttatus, Vieill.

Not at all common. The few that I saw were generally at a height of from fifteen to twenty feet from the ground, and they do not seem at all to frequent the thick undergrowth. One that was shot remained clinging to the tree by one foot after it was dead, and had to be shaken down.

20. Cnipolegus cyaneirostris (Vieill.).

I only saw one, which was creeping about among the lower branches of a tree overhanging some water.

21. Copurus colonus, Vieill.

Of frequent occurrence. One might generally be seen on the topmost naked branch of any tree that stood in tolerably open ground, from which it would dart upon any passing insect, returning to its post in true Flycatcher-fashion.

22. Orchilus auricularis (Vieill.).

Occasionally seen hopping about in very thick shrubs.

23. Pitangus sulphuratus (L.).

These birds may be seen in almost every open space of ground where there are a few clumps of low trees, especially in the neighbourhood of water or any marshy ground. They are generally to be found perched upon the top of a low bush, from which they pounce down upon any insect they may see on the ground. I found them very troublesome when trying to shoot birds that frequented marshy ground, as some were generally perched upon a low bush at the edge of the marsh, and on my approach they set up their loud cry, which had the effect of frightening away all birds that were in the neighbourhood. When passing from one bush to another they fly in a very undulating manner. Their cry very much resembles the words bem-te-vi (I see you well), by which name they are known to the Brazilians.

24. CHIROXIPHIA CAUDATA (Shaw).

Tolerably common and well distributed over the country. I saw it both near Itapetininga, and in the woods of the Serra south of Saõ Paulo. The natives call them Fandango birds, and say that they are in the habit of performing a dance: one perches upon a branch, and the others arrange themselves in a circle round it, dancing up and down on their perches to the music sung by the centre one. A female I preserved has the same plumage as the young male—red on the head, with the back greenish blue. Von Pelzeln (Orn. Bras. p. 129, note) remarks the same of an old female collected by Natterer in the same neighbourhood as mine, two months later in the year.

25. CHIROMACHÆRIS GUTTUROSA (Desm.).

The first intimation given of the presence of one of these birds is a sharp whirring sound very like that of a child's small wooden rattle, followed by two or three sharp snaps; the bird itself may then be seen creeping among the branches, stretching out its neck to seize some insect, and ever and anon darting off in pursuit of some passing fly. They do not, however, return to the same post like Flycatchers, but after a successful pursuit, perch upon the nearest branch and resume their search over the tree. They are generally to be found on trees of thick growth, as they do not seem ever to take long flights.

26. ILICURA MILITARIS (Shaw).

This bird is rather rarer than the last, and has very much the same habits. I found both forming a part of the large flocks of birds of almost every description that at certain periods of the year traverse the forests, passing over the same ground day after day at almost precisely the same hour.

27. AMPELIO CUCULLATA (Sw.).

The hollow and rather mournful note of this bird is frequently the only sound that one hears in passing through the depth of the forest, especially at midday, when almost every creature is silent. The bird itself, however, is not very easily noticed, as it remains almost motionless on its perch. I have found them both high up in trees and amongst thick tangled bushes; they are remarkably tame, allowing any one to approach within a few feet without moving.

28. CHASMORHYNCHUS NUDICOLLIS (Vieill.).

There is certainly very little resemblance in the note of this bird to the sound of a church-bell; it is far more like the ringing sound produced by a blacksmith striking his forge; indeed in some parts of the province of Saõ Paulo it is called "ferreiro"*. I did not find it common anywhere, and never saw two together.

29. PYRODERUS SCUTATUS (Shaw).

Common in the thick woods. I found them to be generally solitary except when feeding, when they were sometimes met with in company with the Bell-bird and Toucan in flocks of about half a dozen. At these times they were generally at the tops of the trees; when by themselves, I generally found them about halfway up. Often when walking through the woods I have been startled by one of them flying out just in front of me, crossing the path and remaining at a distance of about twenty feet in the wood on the other side, where it would stop looking at me with stupid curiosity. When feeding, I never heard it utter any cry; but at other times its note is very much like the sound produced by a person breathing loudly.

30. CERYLE AMERICANA (Gm.).

Found several times round shallow pools, especially when the banks were well wooded. I saw them several times perched on logs projecting a few feet out of the water.

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* [*Cf.* Ibis 1860, p. 93.—ED.]

31. Trogon atricollis, Vieill.

Distributed pretty generally throughout the forests, but not abundant in any one locality. It seems to be of rather solitary habits, as I never saw two together.

32. Thalurania glaucopis (Gm.).

By far the commonest Humming-bird in the district. They seem rather fond of water, being most numerous in the vicinity of a stream. I watched one for some time bathing; it was perched on a small twig overhanging a brook, and every now and then darted down to the surface of the water, hovering over it and, whilst still on the wing, splashing about; and after a few seconds it would return to its perch and preen its feathers. After bathing several times, it darted suddenly away.

33. Polemistria chalybea (Vieill.).

Only two specimens obtained.

34. Clytolæma rubinea (Gm.).

The note of this species is more prolonged than that of either of the two preceding birds, and is considerably shriller.

35. Crotophaga ani, L.

Very common. There is scarcely an open piece of ground where there are a few bushes that has not its flock of these birds. They are especially fond of marshy ground, and may often be seen running about amongst a herd of cattle picking up the insects disturbed by the animals. They seem to be very regardless of danger, and will scarcely do more than flit from one bush to another, even when the numbers of the flock are greatly thinned; when hidden in long grass they will allow themselves to be almost trodden upon before rising. The Brazilians seldom molest them, as their flesh is not good to eat.

36. Piaya cayana, L.

I saw these birds pretty often, but always singly. They are by no means of active habits, but remain for some time on the same perch, often hiding themselves very closely; their long tails, however, which they are constantly spreading, generally betray their presence. I found a berry in the throat of one which I shot.

37. Ramphastos dicolorus, L.

Common. Flocks were frequently met with both at the outskirts and in the depths of the forests. I noticed that a flock generally roosted in the same place, invariably proceeding to its feeding-ground early in the morning by one route, and returning in the evening by another, not making any long flights, but resting frequently on the trees in their way: at such times they were far less wary than when feeding. When flying they keep the head and neck well stretched out; and I sometimes fancied that, if they flapped their wings rather faster, they would look at some distance like Wild Ducks.

38. Pteroglossus wiedi, Sturm.

Not so common as the last, and, I think, keeping more to the thick forests.

39. Campephilus robustus (Licht.).

This bird at once attracts attention both by its loud tapping and harsh note, which very much resembles the scream of a child. I only met with it in the thickest parts of the forest; and it does not seem, like most birds, to rest in the heat of the day.

40. Colaptes campestris (Licht.).

This is essentially a bird of the open campos: I never saw them where the country was at all well wooded. They may frequently be seen perched on the numerous ant-hills which cover the Campos, flying off on the approach of a traveller with a loud scream and gliding flight, and perching upon another ant-hill or on some tree*.

41. Conurus vittatus, Shaw.

Very common. I met them frequently in the neighbourhood of maize-plantations, on which they commit great havoc. Along the Saõ-Paulo railroad flocks were frequently seen flying overhead.

42. Brotogerys tiriacula (Bodd.).

I only saw one small flock of these birds.

[* *Cf.* P. Z. S. 1870, pp. 158, 705.—Ed.]

43. **Triclaria cyanogastra** (Vieill.).

My attention was first drawn to this bird by hearing a rather agreeable song proceeding from the top of a tall tree: on looking up I could see nothing but a good-sized green bird, and was surprised to find on shooting, that it was a Parrot. At first I thought there must be some mistake, and that I had shot the wrong bird; but the natives assured me that this kind of Parrot sings; indeed they call it "Sabia sicca," Sabia being the name they give to the Thrush.

44. **Chamæpelia talpacoti**, Sw.

I only noticed these birds round one or two farms, where they associated in small flocks, feeding on the ground in company with various kinds of small birds, and were remarkably shy: on the approach of any one they were invariably the first to take the alarm and fly away. I saw them occasionally perched upon the roofs of outhouses.

45. **Aramides saracura** (Spix).

Almost every marsh and small piece of water has two or three of these birds constantly round it. They are very shy, retreating noiselessly to the nearest shelter on the approach of any one. Towards evening numbers of them congregate and utter their loud call-note, which very much resembles the word "saracura" rapidly repeated.

XXV.—*Contributions to the Ornithology of Egypt.* By Captain G. E. Shelley, F.R.G.S., F.G.S., &c.

[Concluded from p. 147.]

161. **Recurvirostra avocetta**, L. Avocet.

By no means abundant. I met with it in flocks on two occasions:—once in the Delta, in February; and once at Golosaneh, on the 11th of March, when I killed two specimens.

162. **Numenius arcuatus**, L. Curlew.

Abundant throughout Egypt and Nubia, but most numerous in the Delta and the Fayoom. It probably remains in the country throughout the year; for I fired at a bird which I believe to have been the Common Curlew at Erment on the 24th of April.

163. Himantopus candidus, Bonnaterre. Stilt.

Abundant throughout Egypt and Nubia, but more especially so in the Delta, where it may be almost daily seen striding about the shallow pools so frequent near the villages, perfectly regardless of the natives, as if conscious of its own worthlessness as an article of food.

164. Hæmatopus ostralegus, L. Oyster-catcher.

Mr. E. C. Taylor (Ibis, 1867, p. 69) mentions having seen a bird of this species on the shores of the Red Sea, near Suez.

165. Limosa melanura (L.). Black-tailed Godwit.

We only met with a flock of these birds on one occasion, near Sakkara, on the 7th of April, when we shot two specimens.

166. Machetes pugnax (L.). Ruff.

Very plentiful throughout Egypt, especially in the Delta. Generally met with in flocks near the lakes and pools, or singly along the banks of the river.

167. Totanus calidris (L.). Common Redshank.

Very abundant in the Delta; but I did not meet with it above Cairo.

168. Totanus fuscus, Leisler. Spotted Redshank.

We shot several birds of this species out of a flock which we met with at Sakkara on the 7th of April. It may at once be recognized from the last species in any stage of plumage by the dusky ground-colour of some of the tail-feathers (which in the Common Redshank are pure white and black), and by the greater length of its bill.

169. Totanus glottis, Bechst. Greenshank.

Found abundantly throughout Egypt and Nubia.

170. Totanus stagnatilis, Bechst. Marsh-Sandpiper.

Not very uncommon. We met with it evenly distributed throughout Egypt and Nubia. It appears essentially a solitary bird; for I only once met with a pair of them at the same pool, but have seen single specimens on two or three occasions in company with the Wood-Sandpiper. In winter plumage they somewhat resemble the last species, but may be distinguished at a considerable distance by their more slender form and smaller size; in March they begin to acquire their summer dress, and become beautifully spotted with black down the back.

171. TOTANUS OCHROPUS (L.). Green Sandpiper.

To be met with in almost every suitable pool throughout Egypt and Nubia.

172. TOTANUS GLAREOLA (L.). Wood-Sandpiper.

This year I found the present species by far the most abundant Sandpiper in Egypt. It was most numerous in the Delta; but I also shot some in Nubia. It appears very uncertain in its visits; for in 1868 I never saw it to my knowledge, although on both occasions I visited Egypt about the same time of year: Mr. E. C. Taylor also found it rare.

173. ACTITIS HYPOLEUCA (L.). Common Sandpiper.

Very abundant throughout Egypt and Nubia.

174. TRINGA SUBARQUATA, Temm. Curlew Sandpiper.

I only shot this bird on one occasion, on the 8th of May, at Golosaneh, where I saw it in company with a flock of Stints. It is probably not uncommon at certain seasons.

175. TRINGA MINUTA, Leisler. Little Stint.

Abundant throughout Egypt.

176. TRINGA TEMMINCKI, Leisler. Temminck's Stint.

We shot this bird on several occasions, and found it throughout Egypt, but not nearly so plentiful as the last species.

177. GALLINAGO MAJOR (Gm.). Solitary Snipe.

Mr. S. S. Allen (Ibis, 1864, p. 241) mentions having shot one of these birds in May 1863 at Damietta. I know of no other instance of its capture in Egypt.

178. GALLINAGO MEDIA, Leach. Common Snipe.

I have met with Snipe as high up as Dendera on the 24th of March. There is very good Snipe-shooting to be had in the Delta, especially between Alexandria and Lake Menzaleh.

179. GALLINAGO GALLINULA (L.). Jack Snipe.

Abundant wherever the last species is met with.

180. Rhynchæa bengalensis (L.). Painted Snipe.

This beautiful species is very plentiful at times in the Delta, and is, I believe, occasionally met with throughout Egypt. It may easily be killed, as it lies close and does not fly far when disturbed. When we met with them towards the end of February near Damietta, the females had their ovaries very much advanced, and were evidently about to breed.

181. Ibis religiosa, Cuv. Sacred Ibis.

A list of Egyptian birds would appear incomplete without the present species; yet I do not know of any authenticated instance of its having been killed in that country during the present century. There can be no doubt that this species lived formerly in Egypt; for the food that has been found in many of the mummied specimens consists of shells, insects, and reptiles now inhabiting the country. Some authors imagine that this bird was brought into the country by the ancient Egyptians; now this appears to me highly improbable, as it would be the only instance of an animal not indigenous to Egypt having been made an object of general worship. If it formerly inhabited Egypt, we may fairly expect to meet with it again, although persecution may have greatly decreased its numbers.

182. Ibis falcinellus (L.). Glossy Ibis.

By no means abundant in Egypt. I only met with this species on one occasion, near El Kab, on the 22nd of April, when I saw three feeding together in a small pool, and procured two of them.

183. Grus cinerea, Bechst. Common Crane.

I used to see immense flocks of these birds up to the middle of March.

184. Grus virgo, Pall. Demoiselle Crane.

I met with a large flock of these birds on the 2nd of April below Benisooef, when, after in vain trying to stalk them for an hour, I obtained a long shot as they flew over my head. I am not aware of having seen them on any other occasion.

185. Ciconia alba, Bechst. White Stork.

During March and April I used to see immense numbers of these birds on their way north. At times they have crowded the bank like an army, and I have seen large sandbanks in the river white with them; yet I believe they never remain in the country to breed.

186. CICONIA NIGRA (L.). Black Stork.

I met with this bird occasionally on the sand-banks, always singly, but could never get within shot. I have seen several specimens which had been brought from Egypt.

187. ARDEA CINEREA, L. Common Heron.

To be met with daily throughout Egypt and Nubia on every sand-bank, often in considerable numbers, in company with Pelicans, Spoonbills, and Waders.

188. ARDEA PURPUREA, L. Purple Heron.

Seen on several occasions by Mr. E. C. Taylor (Ibis, 1867, p. 70). I have seen a specimen shot by Mr. Josceline Amherst on the Nile this year. It is very abundant in the Fayoom.

189. HERODIAS ALBA (L.). Great White Heron.

I met with this Heron occasionally in the Fayoom; and I also frequently saw flocks of Great White Herons on Lake Mareotis, near Alexandria.

190. HERODIAS GARZETTA (L.). Little Egret.

We first met with this bird at Sioot, on the 5th of February; but it was not plentiful until April, when it had just put on its full breeding-plumage. It feeds exclusively on small fishes. The beak and legs are black, the feet a greenish yellow, irides pale yellow.

191. ARDEOLA RUSSATA (Wagl.). Buff-backed Heron.

Very abundant in Egypt, especially in the Delta, where it may be seen feeding in flocks among the cattle without the least fear of man. It does not acquire its full breeding-plumage before May.

192. ARDEOLA COMATA (Pall.). Squacco Heron.

This bird is not often met with by the Nile traveller, as it does not arrive in Egypt before the latter end of April. I shot the first specimen that I saw on the 1st of May, below Dendera;

and on the 3rd I killed another. They had both been feeding upon locusts.

193. Nycticorax griseus (L.). Night-Heron.

Generally to be met with throughout Egypt, frequenting clumps of Acacia and Palm trees.

194. Botaurus stellaris (L.). Bittern.

Very plentiful in the Delta, and at Lake Fayoom. Elsewhere in Egypt the want of reeds would naturally account for the absence of this species.

195. Botaurus minutus (L.). Little Bittern.

I only met with a single specimen of this bird, which I shot near Koos on the 26th of April. It rose from the road by the river, and only flew a few yards to perch on a large patch of mud close by the water, where it sat motionless with its neck stretched out. It was by no means shy.

196. Platalea leucorodia, L. Spoon-bill.

Very abundant on the Nile, generally in small flocks at the ends of the sand-banks, and often in company with Herons and Pelicans.

197. Phœnicopterus antiquorum, Bp. Flamingo.

Occasionally met with in flocks on the Nile above Cairo, but most numerous in the Delta, especially at Lake Menzaleh, which is the only locality where I saw it. It is extremely difficult to get within shot of a Flamingo, as it frequents the shallow and reedless marshes, where it can see the intruder from a distance. One flock of these birds I saw would not allow me to approach nearer than five hundred yards.

198. Fulica atra, L. Common Coot.

Very abundant in the Delta; and I have shot them at Girgeh, in Upper Egypt.

199. Porphyrio hyacinthinus, Temm. Violet Gallinule.

I have seen three specimens of this bird, which were collected by Mr. Josceline Amherst's party this year in Egypt. It is common in Lake Fayoom.

200. Gallinula chloropus (L.). Moor-Hen.

I believe that the Moor-Hen is not very uncommon in Egypt. I only observed it once in the Delta, on the 16th of February; although just out of shot I could not be mistaken in the bird, as I watched it swim across a small sedgy pool.

201. Rallus aquaticus, L. Water-Rail.

Mr. E. C. Taylor tells me that he has seen this bird abundant in the market at Alexandria, so that it is probably common in the Delta. It is plentiful at Lake Fayoom.

202. Porzana maruetta, Leach. Spotted Crake.

Not uncommon in the Delta. I saw it on two occasions near Damietta, and procured one specimen.

203. Anser ægyptiacus, Linn. Egyptian Goose.

Very plentifully distributed throughout Egypt and Nubia. It breeds along the banks of the Nile in March. In the beginning of May I shot some fine young birds.

204. Anser albifrons, Gm. White-fronted Goose.

This is the most abundant Goose on the Nile, where it may often be met with in large flocks. I have shot it on several occasions in February and March, but have rarely seen it later, as it does not breed there.

205. Anas boschas, L. Common Wild Duck.

Very abundant throughout Egypt and Nubia, and remains to breed.

206. Anas strepera, L. Gadwall.

Not very abundant. We once met with a small flock and killed one out of it, near El Kab, on the 26th of February.

207. Tadorna vulpanser, Fleming. Common Sheldrake.

The only authentic Egyptian specimen of this bird that I have seen was shot this year by Mr. Josceline Amherst.

Mr. S. S. Allen (Ibis, 1864, p. 241) observes that it is often brought to the market at Alexandria.

208. Tadorna rutila (Pall.). Ruddy Sheldrake.

By no means common.

(Ibis, 1867, p. 71.) Mr. E. C. Taylor's party shot one specimen.

209. Dafila acuta (L.). Pintail.

We frequently shot this species.

210. Rhynchaspis clypeata (L.). Shoveller.

This is one of the most abundant species of Ducks throughout Egypt, where, I believe, it remains to breed.

211. Querquedula crecca (L.). Common Teal.

Very abundant everywhere.

212. Querquedula circia (L.). Garganey Teal.

We met with this bird in tolerable abundance at El Kab, towards the end of April, and shot one specimen.

213. Mareca penelope (L.). Widgeon.

We shot this bird on Lake Menzaleh, while stopping at Port Said, and have frequently seen it in the market at Alexandria.

214. Nyroca leucophthalma (Bechst.). Ferruginous Duck.

This Duck is extremely abundant in Egypt, and is usually met with in immense flocks.

215. Fuligula ferina (L.). Pochard.

Very abundant; I have often shot this species both on the river itself and in pools.

216. Fuligula cristata (Leach). Tufted Duck.

I believe that I saw large flocks of this species on the Nile, but could never get within shot of them. It is plentiful in the Fayoom.

217. Erismatura mersa (Pall.). White-headed Duck.

By no means uncommon in the Delta, where I have shot it near Alexandria in the beginning of April.

218. Podiceps minor (L.). Little Grebe.

Collected by Mr. Josceline Amherst's party on the Nile this spring. I believe that I saw it on Lake Mareotis, near Alexandria.

219. Podiceps cristatus (L.). Great Crested Grebe.

I shot a Grebe near Keneh which I believe to have belonged to this species, but was unable to obtain it, as the natives refused to plunge into the water after it, for fear of the Crocodiles. Mr. E. C. Taylor is also of opinion that he has seen this species in Egypt (Ibis, 1867, p. 71).

220. PHALACROCORAX CARBO (L.). Cormorant.

Plentiful throughout Egypt in winter; but I have not observed it in Nubia. I have never seen it later than March.

221. PELECANUS ONOCROTALUS, L. White Pelican.

Very abundant on the Nile. On the 20th of April, below Edfoo, an immense flock of several thousands passed low along the river, flying northward; and although fired at several times, they still kept streaming onwards in one continuous flock. We only killed one bird out of them, as we had nothing but small shot at the time. Irides crimson; pouch bright yellow; feathers on the forehead coming to a point towards the bill.

222. PELECANUS CRISPUS, Bruch. Dalmatian Pelican.

On the 6th of February, 1868, I shot a Pelican which I believe to belong to this species. It was in company with about a dozen others, and at a great distance off, when I killed it with my rifle. The pouch and legs were pink, and the irides white. Feathers on the forehead terminating in a curved line, which is concave towards the middle of the culmen.

223. LARUS FUSCUS, L. Lesser Black-backed Gull.

Abundant on the Nile both in Egypt and Nubia. In April we frequently saw small flocks of these birds, generally towards evening, always passing northward. I also observed similar small flocks of another large species of Gull, probably *L. fuscescens*, as high up as Nubia. I shot a specimen of *L. fuscus* near Erment on the 24th of April.

224. LARUS FUSCESCENS, Licht. Mediterranean Herring-Gull.

Very abundant along the coast. I shot it frequently near Damietta. It very closely resembles the common Herring-Gull; but its back is a shade darker, and the legs are yellow, instead of pink, in the adult birds.

225. LARUS ICHTHYAETOS, Pall. Great Black-headed Gull.

This magnificent Gull I met with once in full plumage, on the

26th of February, near El Kab, when I got within about fifty yards of it.

226. Larus ridibundus, L. Black-headed Gull.

Very abundant on the Nile in February and March. I saw large flocks of this Gull between Cairo and Benisooef, feeding on the locusts which swarmed throughout Egypt this year.

227. Larus melanocephalus, Natt. Natterer's Gull.

I believe that I saw this Gull on several occasions in company with the last species near Benisooef, in the early part of March. Mr. E. C. Taylor mentions having seen it at Alexandria in April.

228. Larus tenuirostris, Temm. Slender-billed Gull.

Mr. E. C. Taylor's party obtained a specimen of this Gull out of a small flock near Keneh (Ibis, 1867, p. 72).

229. Sterna anglica, Montagu. Gull-billed Tern.

We met with this bird in great abundance near Damietta in February, and have frequently killed it above Cairo, as far south as Sioot, in the month of March.

230. Sterna velox, Rüpp. Swift Tern.

Mr. E. C. Taylor (Ibis, 1867, p. 72) mentions it as Egyptian.

231. Sterna cantiaca, Gm. Sandwich Tern.

Mr. E. C. Taylor mentions having seen this bird near Damietta (Ibis, 1867, p. 72).

232. Sterna caspia, Pall. Caspian Tern.

Mr. E. C. Taylor observed this bird flying over the lake near Damietta (Ibis, 1867, p. 72).

233. Sterna minuta, L. Lesser Tern.

I have seen a specimen of this Tern in Mr. Baird's collection of birds from Egypt. This is the only instance I know of its having been shot in that country.

234. Hydrochelidon fissipes (L.). Black Tern.

Mr. E. C. Taylor mentions seeing this bird near Damietta in April (Ibis, 1867, p. 73).

235. Hydrochelidon leucoparia (Natt.). Whiskered Tern.

I shot four of these birds out of a small flock that were playing round a sandbank near How on the 1st of May. I saw some Terns higher up the river a few days previously, which were probably of this species.

236. RHYNCHOPS ORIENTALIS, Rüpp. Scissors-billed Tern.

I first saw some of these curious birds flitting over the sandbanks near Edfoo, on the 1st of April; on the 4th a small flock passed our boat near Phile; and I met, I believe, the same flock ten days later among the rapids of the first Cataract. Afterwards I saw them frequently in considerable numbers, and killed several near Erment, where, I believe, they were beginning to breed on the sandbanks. They were not shy, and I had plenty of opportunity of watching their Tern-like evolutions as they played together.

Mr. S. S. Allen (Ibis, 1864, p. 243) mentions having seen this bird once near Thebes, and speaks of its having been killed at Damietta *.

XXVI.—*Notes on some of the Birds of the United States of Columbia.* By CLAUDE W. WYATT.

[Continued from p. 131.]

THREE localities—Santa Marta, Cienaga, and Catamucho—which are mentioned in the following list will not be found in the map accompanying the first part of this paper. To Santa Marta and Cienaga I have already alluded, and their position will be given in any fair map of South America. Catamucho is a little village situated on the banks of the Magdalena, about a hundred miles from Baranquilla, where we landed for half an hour during our journey up the river to Ocaña. At each of these places we fell in with birds which we did not meet with elsewhere †.

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* Since the above article was in type, I have again visited Egypt and obtained several species not inserted in the foregoing list. My notes concerning these, and also on some species already mentioned, I hope to publish shortly in a supplement.—G. E. S.

† [The names of the species mentioned below have been determined by Mr. Sclater and myself, the nomenclature (unless the contrary is stated) being that adopted by Sclater in his Catalogue of American Birds.—ED.]

1. Turdus swainsoni.

This little Thrush we only met with on one occasion, in a wood at Herradura.

2 Turdus gigas.

Frequents the outskirts of woods at an altitude of from 8000 to 9000 feet. We first met with it about a day's journey from Ocaña. Just under the paramo of Pamplona it was not an uncommon species. Iris brown.

3. Turdus euryzonus[*].

We only met with this rare Thrush in one locality, in the dense forest on the summit of the mountain-chain between the Magdalena and Ocaña. There, however, it was not an uncommon bird, but, owing to the density of the vegetation, it is difficult to obtain specimens. We often saw it sitting on the bough of some tree within a few yards of us; but there was no chance of finding it if we shot it. Locality Alto. Altitude 5000–6000 feet.

4. Turdus albiventris[†].

We shot this species by the side of little streams, where there were a few trees and bushes, between Ocaña and La Cruz, and again met with it in the Cocuta valley. Altitude 5000–4000 feet. Iris brown.

5. Mimus melanopterus.

This was the first bird we saw in the Mimosa thicket at the back of Santa Marta. It generally chooses one of the highest boughs for a perch, and there displays its power of song and mimicry. At Ocaña and in the adjoining mountain-regions it was equally common. Iris brown.

6. Cinclus leuconotus.

The head-waters of those streams of the Cordillera which have their rise in the "tierra fria," are well adapted to the habits of this little Dipper. We shot a pair of these birds by the stream near Vetas, just under the paramo. Altitude 9500 feet. We saw others by another stream near Matisgua. As we were making our way from Bucaramanga to the paramo, W. caught sight of what appeared to be another species of Dipper, a darker bird, in the stream near the road.

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[*] [*Merula euryzona*, Du Bus, Esq. Orn. t. 34 (1850). This is the Thrush described by Sclater, P. Z. S. 1857, p. 273, and figured in 'The Ibis' for 1861, p. 277, pl. viii. as *Turdus fulviventris*. We are not sure that Du Bus's plate was ever really published; but as it exists in the Zoological Society's copy of this work, we give Du Bus's name priority.—P. L. S. & O. S.]

[†] [Scl. & Salv. Ex. Orn. p. 147. t. 74.]

7. DONACOBIUS ATRICAPILLUS.

Common among the reeds by the side of Lake Paturia.

8. HELIODYTES GRISEUS.

A common species in the Mimosa thicket at Santa Marta. We found a pair building their nest high up in a gigantic Cactus, December 29th. We did not meet with it elsewhere. Iris white.

9. CAMPYLORHYNCHUS PARDUS*.

We shot a pair of these birds in some scrub and underwood at Catamucho. It is smaller than the following species; but the markings are larger, of a deeper brown, and more defined.

10. CAMPYLORHYNCHUS ZONATOIDES.

Our single specimen of this species was obtained near Naranjo, where the forest was being cleared, and there was a great quantity of decayed timber, amongst which the bird was creeping about.

11. THRYOTHORUS LEUCOTIS, Lafr. *T. albipectus*, Cab.: Scl. Cat. p. 20.

This bird we shot at Catamucho.

12. TROGLODYTES TESSELLATUS†.

Unfortunately we only brought home one specimen of this little Wren, which we shot at an altitude of 9000 feet on the Pamplona road. It was a cock bird; and had it not been singing, I should have taken it for a young one of the preceding species. I was, in fact, not aware until I was in England that the two were distinct, as, while out there, there was no opportunity of comparing them. I cannot speak positively about its range; but to the best of my belief it is common at Ocaña, and almost everywhere in the mountain-regions; at all events, we shot a bird on several occasions which we took for this species, but did not preserve, as being in bad plumage, and we thought we had already got one specimen. A pair were nesting under the tiles of our neighbour's house at Ocaña at the end of January. Their habits much resemble those of our Wren.

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* [CAMPYLORHYNCHUS PARDUS, Scl. P. Z. S. 1857, p. 271.
Mr. Wyatt's specimen agrees with Sclater's type.—P. L. S. & O. S.]

† [TROGLODYTES TESSELLATUS, Lafr. & D'Orb.
See Salvin's remarks on this Wren, P. Z. S. 1867, p. 135.—P. L. S. & O. S.]

13. ANTHUS BOGOTENSIS.

The only Pipit that came under our observation. It inhabits the region of paramos.

14. HENICOCICHLA NOVEBORACENSIS.

Ocaña and Bucaramanga. Not common.

15. MNIOTILTA VARIA.

Herradura.

16. PARULA PITIAYUMI.

Frequents the bushes by the side of the stream in the Cocuta valley.

17. GEOTHLYPIS PHILADELPHIA.

Obtained once near the stream at Ocaña.

18. HELMINTHOPHAGA PEREGRINA.

Herradura.

19. DENDRŒCA BLACKBURNIÆ.

We first met with this bird at Alto. Its upward range seems to be terminated only by the paramos. Among the oaks on the Pamplona road, just under the paramo, it was very common. The bright orange throat of the male makes it a conspicuous bird. I fancy it does not occur at a lower elevation than 5000 feet in these latitudes.

20. DENDRŒCA CASTANEA.

Naranjo.

21. DENDŒCA ÆSTIVA.

Common in the neighbourhood of the stream at Ocaña. The yellow coloration of the plumage is much brighter in the male than in the female.

22. Basileuterus mesochrysus.

Herradura. Cocuta valley.

23. Setophaga ruticilla.

Common in the wood at Herradura, and in various localities between Ocaña and Bucaramanga.

24. Setophaga verticalis.

Occurs in the forest at an altitude of about from 5000 to 7000 feet. Alto, Sta. Rosa, Canuto, &c.

25. Setophaga ornata.

Obtained once at Portrerras.

26. Progne leucogastra.

At Catamucho, in the Magdalena valley, we found this bird and its congener *P. tapera* flying about together, and at first thought they were young and old birds.

27. Progne tapera.

Ascends the mountains to an altitude of from 4000 to 5000 feet. A pair of these birds were nesting under the tiles of our house at the end of January.

28. Hirundo albiventris.

This species is confined to the low country. We saw it skimming over the Magdalena and the Lake of Paturia.

29. Atticora cyanoleuca.

We did not observe this species in the Magdalena valley; and it seems to be a bird of the "tierra templada;" its upward range, so far as our observations went, terminates at an altitude of about 8000 feet. It was a common bird at Ocaña, and might generally be seen with *P. tapera* on the roof of our house.

30. Stelgidopteryx uropygialis*.

We observed this species at Ocaña and Bucaramanga.

At least two species of *Hirundinidæ*, besides those I have mentioned, came under our observation; but we were not able to obtain specimens. We shot three birds of one of these—a small brownish-black bird—at the foot of the mountains in the Magdalena valley on the road to Paturia; but they all fell where we could not get them.

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* [Stelgidopteryx uropygialis (Lawr.).
See Baird's Review of American Birds, p. 317.—P. L. S. & O. S.]

31. Vireo flavifrons.

Pirico.

32. Diglossa albilateralis.

Herradura, Canuto. Not common.

33. Diglossa humeralis.

A bird of the high regions. Altitude 9000 feet.

34. Diglossopis cærulescens.

Frequents forests at an altitude of about 7000 feet. We met with it at Portrerras and two or three other localities between Ocaña and Bucaramanga. Iris light red.

35. Conirostrum rufum.

A bird of the high regions; we shot it in the valley above Vetas. Altitude 10,000 feet.

36. Dacnis cœrebicolor.

Obtained once amongst the scrub on the savanna at Bucaramanga.

37. Dacnis humeralis.

We shot a single specimen of this species in a large wood near Aguachica.

38. Chlorophanes atricapilla.

Met with only on the range of mountains between Bucaramanga and the Magdalena. Frequents the outside of the forest near Canta and San Nicolas. Iris red.

39. Certhiola luteola.

A common bird in the lower mountain-districts.

40. Euphonia crassirostris.

We met with this bird in the Cocuta valley, and amongst the scrub on the savanna of Bucaramanga; and in the town itself we saw a pair evidently looking out for a nesting-place under the thatch of a shed, March 7th. The cock bird only wears the bright yellow and rich purple plumage.

41. PIPRIDEA VENEZUELENSIS.

A single specimen of this species was obtained near Canuto.

42. CALLISTE GUTTATA.

The genus Calliste contains some of the prettiest of South-American birds. *C. guttata* we met with on the mountain-chain above Ocaña. Santa Rosa, Alto.

43. CALLISTE CAYANA.

Very common at Ocaña and Bucaramanga.

44. CALLISTE VITRIOLINA.

A dark-coloured form of the preceding species. Occurs in the same localities, but is not so common.

45. CALLISTE GYROLOIDES.

We only met with this bird on the mountain-chain between Bucaramanga and the Magdalena. Frequents the outside of the forest.

46. CALLISTE ATRICAPILLA.

Occurred in the forest, but not commonly, at Pirico, Canuto, &c. Altitude 5000–6000 feet.

47. CALLISTE CYANICOLLIS.

Frequents the same localities as *C. gyroloides*, and where it occurs is common enough. The blue of the head and throat is brightest in the cock bird. Its vertical range seems to terminate at an altitude of about 5000 feet.

48. CALLISTE VENUSTA.

We only obtained one specimen of this bird, in the forest near Alto.

49. PŒCILOTHRAUPIS LUNULATA.

We met with this beautiful bird above Vetas, amongst some stunted trees and shrubs; altitude 10,000 feet: also in a little wood below Vetas; altitude 9000 feet. Iris dark brown.

50. TANAGRA CANA.

The most common of the Tanagers, and seems to be generally distributed from the "Tierra calida" up to an altitude of about 8000 feet. Frequents the neighbourhood of towns, streams, and orange-gardens.

51. TANAGRA MELANOPTERA.

Common on the savanna at Bucaramanga. We also shot it at Aguachica and Ocaña.

52. TANAGRA AURICRISSA.

This pretty blue-headed Tanager does not seem to live at a lower elevation than 5000 feet, or above 8000 feet. In the forest at Alto it was very common; and we constantly met with it in the forest between Ocaña and Bucaramanga. Iris chocolate-colour.

53. RAMPHOCŒLUS DIMIDIATUS.

The beautiful scarlet plumage of this bird is sure to attract every one's attention. The inhabitants of the country call it the "Cardinal." It frequents the sides of streams where there is vegetation, gardens, &c. Once or twice we saw it in the forest, always, however, near a habitation of some sort. It seems to be universally distributed up to an altitude of about 7000 feet. The scarlet plumage seems to depend upon the age and sex of the bird, the young male wearing the same sober dress as the female. We found one nest in a low bush near Paturia, March 20th. The eggs were of a pea-green colour, blotched with brown; and the nest was composed of dried leaves and grass, lined with a dark fibrous root.

54. PYRANGA ÆSTIVA.

We shot this bird in various stages of plumage, in the yellowish-brown dress of the young male and female, in the deep rosy colour of that of the adult male, and in many intermediate stages, in which the rose-colour grows over the brown. Herradura, Cocuta valley, Canta.

55. PYRANGA ARDENS.

We shot a bird of this species in the forest near Canuto.

56. PHŒNICOTHRAUPIS GUTTURALIS*.

We fell in with a pair of this rare bird, of which we obtained one, in the forest at Naranjo. Iris brown. Altitude 2500 feet.

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* [PHŒNICOTHRAUPIS GUTTURALIS, Scl. Ann. Nat. H. xiii. p. 25 (1854). This Tanager was described by Sclater from a single specimen in the British Museum, which was believed to be a Bogotá skin; and he has never since met with an individual of it. It is a typical species of the genus, easily recognizable by its generally dark ashy plumage.—P. L. S. & O. S.]

57. Tachyphonus melaleucus.

A common species in the "tierra templada." Frequents sides of streams, gardens, &c. in the neighbourhood of Ocaña and Bucaramanga. The male is a black bird, with a white patch on the shoulder of the wing; the female brown.

58. Chlorospingus albitemporalis.

Not uncommon at Alto, and in other localities of the same altitude in the forests between Ocaña and Bucaramanga. Iris straw-colour.

59. Buarremon pallidinuchus.

Met with once near Vetas. Altitude 10,000 feet.

60. Buarremon albifrenatus.

Common in the forest at an altitude of from 5000 to 7000 feet. Alto &c.

61. Saltator magnus.

Only met with once, at Alto.

62. Saltator olivascens*.

A very common species in the Mimosa thicket at Santa Marta.

63. Saltator albicollis.

Seems to be a mountain-form of the preceding species. Common at Ocaña and Bucaramanga.

64. Orchesticus ater.

Inhabits the desolate country near Canta, where the vegetation consists only of a few bushes.

65. Pheucticus uropygialis†.

A bird of the high regions. We only met with it in the valley above Matisgua. Altitude about 9000 feet.

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* [Saltator olivascens, Cab.

The series of this *Saltator* collected by Mr. Wyatt and his assistant seem to prove that *Saltator flavidicollis*, Scl. (P. Z. S. 1860, p. 274) described from Ecuadorean specimens collected by Fraser, is either the female or young of the present bird.—P. L. S. & O. S.]

† [Pheucticus uropygialis, Scl. et Salv. P. Z. S. 1870, p. 840.

Described from Bogotá skins, with which Mr. Wyatt's single specimen fully agrees.—P. L. S. & O. S.]

66. HEDYMELES LUDOVICIANUS.

Common in the wood at Herradura. The specimens we obtained were in bad plumage. The breeding-season was apparently just over when we got there, at the beginning of February.

67. SPERMOPHILA MINUTA.

Ocaña, Paturia.

68. SPERMOPHILA GUTTURALIS.

Common near the stream at Ocaña. We met with it in great numbers feeding with its congener *S. minuta* on the seeds of some low bushes. The male only has the black throat.

69. VOLATINIA JACARINA.

Ocaña and Bucaramanga.

70. PHONIPARA PUSILLA.

We only met with this bird in the neighbourhood of Bucaramanga. The orange patch on the forehead makes it a conspicuous species.

71. PHRYGILUS UNICOLOR.

A bird of the high regions. We only found it on the paramo above Vetas. Altitude 10,000–11,000 feet.

72. ZONOTRICHIA PILEATA.

The range of this species seems to be from 7000 to about 9000 feet. We shot it at Cachiri, and on the Pamplona road.

73. EUSPIZA AMERICANA.

Occurs, but not commonly, near Ocaña.

74. CHRYSOMITRIS COLUMBIANA.

Ocaña.

75. CHRYSOMITRIS XANTHOGASTRA. Du Bus.

Met with in small flocks near Canuto, and in the Cocuta valley. Altitude 5000–6000 feet.

76. SYCALIS BRASILIENSIS.

Santa Marta. Common in the Mimosa thicket.

77. OSTINOPS CRISTATUS.

Not uncommon in the lower mountain-districts. We found them nesting when we first arrived in the country; and the process was still going on when we left. They breed in colonies, and make very long pendulous nests. A large colony had established themselves in a leafless tree in a valley near San Nicolas when we were there in March; and every evening just before sunset they held a most discordant concert, flying over the valley, wheeling round and then diving down to the bottom of their bag-shaped nests, some of which were so loosely woven that we could see the bird, when in, struggling to get down to the bottom. Iris bright sky-blue.

78. CASSICUS FLAVICRISSUS*.

This Cassique (a smaller bird than the preceding species) we only found at the Lake of Paturia, where there were several colonies nesting about the middle of March, in the low bushes which overhung the water. We brought home three of their beautiful pendulous nests, most of which were within reach from a canoe. They were not all of the same pattern: in some the entrance was at the top, so as to form merely a long narrow bag; in others the top was roofed over, and the entrance was at the side. The colony we robbed was not easily disturbed, and the birds, though at last driven away, very soon returned. Individuals differ in size and as to the coloration of the dark portion of their plumage; but I cannot say whether it depends upon age or sex, as the sexes of our specimens, by some oversight, were not marked. They lay two cream-coloured eggs blotched with purple and brown. Iris pale blue.

79. ICTERUS XANTHORNUS.

Common at Santa Marta, but does not seem to occur up the country. Iris brown.

* [CASSICUS FLAVICRISSUS, Scl.

In our paper on the Birds of Panama (P. Z. S. 1864, p. 353) we inserted *Cassicus persicus*, and stated that we could not distinguish from it *C. vitellinus* of Lawrence. A reexamination of this subject, aided with further materials has induced us to alter our views. It now appears that Mr. Lawrence's species is identical with *Cassiculus flavicrissus* from Ecuador, described by Sclater, P. Z. S. 1860, p. 276, from specimens obtained by Fraser. Mr. Lawrence's name must therefore give way, and *Cassicus flavicrissus* may be recognized as a western representative of *C. persicus*, differing mainly in the yellow colour being confined to the base of the tail-feathers. We have compared Mr. Wyatt's specimens with those from Panama and those from Western Ecuador, and find them agree.—P. L. S. & O. S.]

80. ICTERUS GIRAUDI.

Very common in the "tierra templada." Frequents gardens, bushes by streams, &c. Its range upwards does not seem to exceed an altitude of about 7000 feet. Iris brown.

81. STURNELLA LUDOVICIANA.

This curious bird we first met with on some marshy ground near La Cruz, and afterwards in the Cocuta valley. Altitude 5000 feet. When we first saw them we mistook them for Plovers.

82. XANTHOSOMUS ICTEROCEPHALUS.

We used to put up hundreds of these birds from the reeds as we paddled about on the lake of Paturia.

83. QUISCALUS ASSIMILIS.

Cienaga.

84. QUISCALUS SUBALARIS.

This pretty black Starling, with a chocolate-coloured patch on the wing, we shot amongst the oaks under the paramo of Pamplona. Altitude about 9000 feet.

85. CYANOCITTA ARMILLATA.

A bird of the high regions. Frequents wooded streams just under the paramos. The blue bloom on the plumage as the bird flies and the light falls on it, is exceedingly beautiful. We only met with it on three occasions, on two of which it occurred in small flocks of five or six. Iris dark brown.

86. CYANOCORAX INCAS.

Generally distributed amongst the mountains from an altitude of about 4000 feet. Its range upwards overlaps that of the allied species *C. armillata*, and is only terminated by the paramos. They seemed to be very fond of the fruit of the guava, which grew in a wild state in a valley near Ocaña. They generally congregate in small flocks of six or seven, and are exceedingly shy and wary. Iris bright yellow.

87. SYNALLAXIS WYATTI*.

Towards the end of what seemed likely to prove a fruitless day, so far as birds were concerned, while crossing the paramo of Pamplona, we fell in with a pair of these birds creeping about amongst some stones. We were only able to shoot one of the two we saw. It appears to be a new species. The locality where it was obtained was very wild and desolate, and totally destitute of shrubs or covert of any description, with the exception of a few large grey boulders. The altitude was something over 10,000 feet, and the spot, I should think, was about a two hours' ride from Vetas on the road to Matisgua. Iris brown.

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* [SYNALLAXIS WYATTI, Scl. et Salv. P. Z. S. 1870, p. 840.]

88. Leptoxura cinnamomea.

Occurs among the reeds at the Lake of Paturia.

89. Xenops rutilus.

Obtained once near Canta.

90. Glyphorhynchus cuneatus.

Canuto.

91. Dendrocolaptes sanctithomæ.

Naranjo. Iris light brown.

92. Picolaptes lacrymiger.

Not uncommon in the forests between Ocaña and Bucaramanga.

93. Dendroplex picirostris.

We saw several of these birds running up the Cacti near Santa Marta. Iris brown.

94. Thamnophilus multistriatus.

Only obtained once, by the upper part of the stream near Ocaña. Altitude 4000 feet.

95. Myrmotherula fulviventris.

Naranjo.

96. Formicivora intermedia.

Not uncommon among the scrub on the savanna of Bucaramanga. It has a peculiar way of fluffing out its feathers.

97. Ochthoeca setophagoides.

Occasionally met with on the outskirts of the forests between Bucaramanga and Ocaña.

98. SAYORNIS CINERACEA.

The habits and note of this little bird are very peculiar. It was not uncommon by the stream at Ocaña and other streams in the neighbourhood. We also met with it in the Cocuta valley, but never by any of the streams in the forest. Its clear ringing note is very striking; and when we first heard it we were much puzzled as to the cause of it, being unable to find the bird. When seen on the ground it looks like a short Wagtail. We generally saw it by the water's edge, or sitting on a stone in the middle of the stream. We saw it occasionally, however, in the bushes overhanging the stream. Iris dark brown.

99. FLUVICOLA PICA.

We often saw this species sitting on the reeds at the Lake of Paturia.

100. ARUNDINICOLA LEUCOCEPHALA.

Lake of Paturia and Cienaga.

101. COPURUS LEUCONOTUS.

Inhabits the lower part of the mountains between Bucaramanga and the Magdalena, also the Magdalena valley. We shot it at Naranjo. Range upwards 3000 feet.

102. TODIROSTRUM CINEREUM.

This little bird we first met with in the Cocuta valley, where it was not uncommon. We afterwards found a pair nesting near San Nicolas when we were there in March. The nest, which was not quite finished, was suspended from a bush about six feet from the ground. The entrance was at the side, and there seemed to be hardly any cavity to keep the eggs in. Altitude 3000–5000 feet. Iris white.

103. HAPALOCERCUS MELORYPHUS.

Not uncommon among the scrub on the savanna of Bucaramanga.

104. SERPOPHAGA CINEREA.

We saw several of these little birds by a stream near Canuto, running along by the water's edge like Wagtails, and hawking for flies from the neighbouring bushes.

105. TYRANNISCUS CHRYSOPS.

We obtained three specimens of this species in three different localities—Herradura, Pirico, and Naranjo. All three differ in size.

*106. TYRANNISCUS IMPROBUS.

Owing to some oversight, our specimen of this species was not labelled. It was obtained, I fancy, either at Naranjo or somewhere between Ocaña and Bucaramanga.

107. MYIOZETETES GUIANENSIS.

A common bird between Canta and the Magdalena.

108. SUBLEGATUS GLABER, Scl. & Salv. P. Z. S. 1868, p. 171.

Santa Marta.

109. PITANGUS RUFIPENNIS.

A bird of the low country. We shot it near Cienaga. The people of the country call it "Pecho amarillo" (the yellow-breast). When at Baranquilla, Jan. 1st, we saw an old bird of this species feeding its young ones, which were sitting in a large tree in the middle of the town.

110. MYIODYNASTES NOBILIS.

Obtained once in a wood in the ravine to the west of Bucaramanga.

†111. MYIARCHUS ERYTHROCERCUS.

Mimosa thicket, Santa Marta. Iris brown.

112. MYIARCHUS NIGRICEPS.

We found this Flycatcher to be common at Herradura, and in other localities between Ocaña and Bucaramanga. Iris brown.

113. MYIOBIUS NÆVIUS.

A common species near the stream at Ocaña. The patch on the vertex is orange in the male and yellow in the female.

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* [TYRANNISCUS IMPROBUS, Scl. & Salv. P. Z. S. 1870, p. 841.

This little Tyrant-bird we have recently described from a single specimen in Mr. Goering's collection from Merida. Its nearest ally is *T. vilissimus* of Guatemala. See our notes on the genus. P. Z. S. 1870, p. 842.—P. L. S. & O. S.]

† [MYIARCHUS ERYTHROCERCUS, Scl. & Salv.

See our remarks on this species. P. Z. S. 1868, p. 631.—P. L. S. & O. S.]

114. TYRANNUS MELANCHOLICUS.

The most common of all the Flycatchers, and apparently universally distributed up to an altitude of about 9000 feet. Iris brown.

115. MILVULUS TYRANNUS.

We first met with this graceful long-tailed Flycatcher on the savanna in the neighbourhood of Aguachica. When at Ocaña we used to see them congregated in considerable numbers just before sunset, whirling round high up in the air, and darting down like rockets to the ground. It only frequents the open parts of the country; and we did not meet with it at a greater elevation than 5000 feet. The two middle rectrices are considerably longer in the male than in the female. Iris brown.

116. PACHYRHAMPHUS, sp.?

This little brown bird we only met with in the scrub outside the forest at San Nicolas. It was not uncommon. Altitude 3000 feet.

117. LIPAUGUS HOLERYTHRUS.

Obtained once in the dense forest of the Magdalena valley, about a day's journey from Paturia.

118. HETEROPELMA AMAZONUM.

Another inhabitant of the thickest forests. Our specimen was procured near Naranjo. Altitude 2000 feet.

119. RUPICOLA PERUVIANA.

Only met with on one occasion, in the forest, three or four hours' ride from Portrerras (*anteà*, p. 125). Iris bright yellow. Altitude 7000 feet.

120. HELIOCHERA RUBRO-CRISTATA.

A bird of the high regions. We shot it on the Pamplona road, at an altitude of 9000 feet, among some oaks, and afterwards on the paramo above Vetas. Altitude 10,500 feet. Iris deep pink.

121. PYRODERUS GRANADENSIS.

We never met with this bird except on the occasion I have already alluded to, at Canuto (*anteà*, p. 123). At that particular spot it was evidently not uncommon; and doubtless we could have obtained several specimens of it, had more time been at our disposal. When I first saw the bird I felt perfectly certain that its plumage was of a bright green colour; and this circumstance shows how very easily one may be deceived as to the colour of a bird's plumage when seen in a state of nature, owing to reflected light. The glossy black plumage of *P. granadensis* perhaps reflected the green foliage, thereby giving the bird the appearance, as seen for a moment, of being of a bright green colour. Altitude about 6000 feet.

[To be continued.]

XXVII.—*Supplementary Notes to 'The Birds of India.'* By T. C. Jerdon, F.Z.S., Retired Deputy Inspector-General of Hospitals, Madras.

[Continued from p. 247.]

(Plate X.)

39 *bis.* **Spilornis bacha**, Daudin. The Lesser Crested Serpent-Eagle.

Spilornis spilogaster, Blyth.

S. elgini, Tytler.

It appears fully agreed on by all that the small Serpent-Eagle of Ceylon and Southern India is the same as the Andaman bird. It is common in the forests of Malabar; but as far south as the Deccan, at all events, is replaced by the large race. I well remember how the first specimen of *S. cheela* that I shot, near Doulatabad, surprised me much by its great size, compared with those I had previously seen in Malabar.

It appears that *S. cheela*, stated by Tytler also to occur in the Andamans, has not been sent from that locality, as stated by Beavan, but corrected by Mr. Gurney; and Layard's statement of *S. cheela* occurring in Ceylon is also doubted by the same excellent authority*.

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* *Falco bido*, Horsfield, is thought by some ornithologists to be the same as *S. bacha*; but I believe it is a larger bird. An intermediate race has been procured in Hainan, Burmah, and Siam, which Swinhoe has named *S. rutherfordi*. Mr. Gurney has suggested to me that Levaillant's account of the *Spilornis* at the Cape preying on the Conies (*Hyrax*) was probably founded on his observation of that habit in *Gypaëtus meridionalis*.

41. POLIOAËTUS ICHTHYAËTUS.

I cannot agree with Mr. Blyth as to *Haliaëtus lineatus*, Gray, of Hardwicke's 'Illustrations' being the young of this bird. I have obtained the young bird, and it is very different in appearance. I look on the figure in question as representing a young Kite, *Milvus govinda*.

41 *bis*. POLIOAËTUS PLUMBEUS, Hodgson.

Whole upper plumage, including all the tail, brownish-cinereous; in the very old bird perhaps pretty pure ashy; lower plumage, except the lower abdomen and under tail-coverts, which are white, much the same.

Dimensions much the same as in the last.

On looking over Mr. Hume's collection I was struck by seeing no white on the tail, and find that all the birds from the N.W. Himalayas have the same character. Mr. Brooks, of Etawa, named it in a letter *fascicaudatus*, but subsequently considered it to be the small *Pol. humilis*, T., of the Malayan fauna. It is, however, a larger bird, nearly equal in size to the other species, and, I think, wants the dark terminal tail-band which is so conspicuous in *P. humilis*. I see that Hodgson, who procured both species, in his drawings called one *plumbeus* and the other, I believe, *lucarius*; so I shall retain the former name, both having been published. Mr. Hume in his 'Scrap-book' has not noticed the distinction; but as he has good specimens I will leave him to describe it more fully hereafter.

42. HALIAËTUS LEUCORYPHOS, Pallas.

Hal. unicolor represents the young bird from the nest, not after the first moult, as erroneously stated by me.

42 *bis*. HALIAËTUS ALBICILLA, L.

I think that there is very little doubt that the Sea-Eagle described by Hume, and attributed, with a query, to *H. pelagicus*, is indeed the European bird. It is a most unexpected addition to the avifauna of India; and its sole occurrence as yet in the plains of the North-west Provinces is an anomaly in the geographical distribution of this Eagle. I saw Mr. Hume's two specimens, both of which are immature; and they closely resemble living specimens of the young European bird in the Zoological Gardens. I fancy that Mr. Hume must have been deceived as to seeing in the same neighbourhood a large Gull-like Eagle.

44. BUTEO VULGARIS.

Under this name two species are certainly included. One of these is 44. BUTEO JAPONICUS, T. & Schlegel, F. Japon. pls. 6 & 6*b*. This was considered by Blyth as well as by myself to be *B. vulgaris*; but I find that it is considered by Mr. Gurney and others to be the Japanese species, which thus extends through China to the Himalayas, and to the plains near the foot of the hills in winter. I have found it at Darjeeling, in Kumaon, and Kashmir in summer, at a height of from 9000 to 10,000 feet. I have also seen it in the cold weather at Saharunpore, in Deyra Doon, and in the Punjab. At Gulmurg, in Kashmir, I found it feeding both on the *Arvicola roylei* and the *Mocoa himalayana*.

A small male that I shot measured 20 inches in length, expanse 45, wing 14½, tail 8. A female was 23 inches, expanse 52, wing 17½, tail 9.

This Buzzard is stated to differ from the European bird in its somewhat more feathered tarsus, somewhat smaller size, and tail with very numerous but not strongly defined dark bars. Most of the specimens that I have myself procured or seen had the general tinge of colour dull brown, not verging on rufous at all, though I see that occasionally a rufous tint prevails, and, as Mr. Gurney remarked to me, the apron-like mark on the lower surface is more observable. Mr. Hume's remarks on the next species, *B. desertorum*, refer chiefly, I consider, *to this species*—certainly as far as relates to the specimens obtained by myself, and, I believe, to the others also. Indeed Mr. Hume himself does not appear to have seen true *B. desertorum*, and says he is by no means satisfied that the Indian bird (i. e. *B. japonicus*) is the same as the African one. He moreover appears to have selected the more rufous examples of *B. japonicus* to describe, considering these to be more typical of the truly rufous species which he imagines he is describing. His dimensions correspond with *B. japonicus*, the wing being described in two specimens as 15½ and 17 inches.

44 *bis.* Buteo desertorum, Daudin. The Rufous Buzzard.
Buteo desertorum, Levaill. Ois. d'Afrique, pl. 17.
B. rufiventer, Jerdon, Ill. Ind. Orn. pl. 27.
B. cirtensis, Levaill. Expl. Algérie, pl. 3.

I was the first to notice the occurrence of this Buzzard in India, which I did in my "Supplement to the Birds of the Peninsula of India"*, and afterwards figured it in my 'Illustrations of Indian Ornithology.' Latterly, following Blyth, I gave it in 'The Birds of India' as simply a rufous variety of *B. vulgaris.* I procured it on the Neilgherries; it has been sent from Madras and Ceylon; and Hodgson procured it also in Nepal, but does not appear to have distinguished it from his *B. canescens* (*ferox*); and indeed Blyth, to whom I sent my type specimen, for long insisted on considering it the same. Von Pelzeln likewise gives it as a synonym of *B. ferox.* It is, however, a very distinct species, being smaller even than *B. vulgaris.* Besides occurring throughout all Africa, India, and Ceylon, it is noted from Persia.

It is certainly, however, a rare bird in India, or has been very much overlooked by collectors.

45. Buteo ferox, Gmelin.
Falco leucurus, Naumann.
Buteo rufescens, Rüpp.
B. canescens, Jerdon, B. India.
B. longipes, Jerdon, Cat.
B. fuliginosus, Hume, Ibis, 1869, p. 356.

This Buzzard is much more common in the North-west Provinces and the Punjab than it is in Southern or Central India; but Hume states that comparatively few breed in the plains to the east of the Jhelum, most of them withdrawing to the lower ranges of the hills, and the North-west Punjab.

When travelling in the desert country of Hansi, Sirsa, &c. in two winters, I frequently saw a very dark Buzzard with what appeared to be a very white tail, but always failed to procure a specimen. I mentioned this in a few notes I put together at Mr. Hume's request. On visiting that gentleman I found that he had procured specimens of that bird, and was then inclined to consider it a distinct species, which he afterwards noticed in 'The Ibis' provisionally as *B. fuliginosus.* In the notes I wrote out subsequently for eventual publication in 'The Ibis,' I state that "it looks very like a dark variety of *B. ferox,* but with the tarsus apparently shorter and more feathered in front." Other specimens in Mr. Hume's collection had the tail darker, and not so albescent.

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* Madras Journal, xiii. p. 165.

Mr. Hume, in the second part of his 'Scrap-book,' has come to the conclusion that the dark bird is merely a state of *B. ferox*. Other naturalists had previously stated that they had seen specimens, both from Abyssinia and India, of a uniform dark chocolate-brown, viz. Gurney two, Schlegel one, from Erzeroom, and Von Pelzeln one, from Sennaar; and this last naturalist says that Brehm's *B. eximius* is named from the dark race of *B. ferox.*

46. BUTEO AQUILINUS, Hodgson *apud* Blyth. The large Hill-Buzzard.

Buteo hemilasius, Schlegel, Faun. Japon. pl. 7.

B. leucocephalus, Hodgson.

There is no longer any doubt that Hodgson's bird, which, from a young specimen he first named *leucocephalus,* is the same as Schlegel's *B. hemilasius*; the feathering of the front of the tarsus narrowing to a point near the base of the tarsus, and the peculiar scutation, described by both naturalists, quite agree. One of Hodgson's specimens is in the British Museum, and very closely agrees with the figure in the 'Fauna Japonica;' and this was sent as *B. leucocephala*, though with a brown head. Among Hodgson's drawings is one in the young state, with the head and neck white, as it is, indeed, more or less, in most Buzzards. Gray formerly gave *B. strophiatus* as a synonym of this species, in which he was followed by Kaup and Bonaparte, notwithstanding, as Schlegel very properly says, that this last is described as an *Archibuteo* with the tarsus completely feathered, *i. e.* in front and on the sides.

Blyth's suggestion that this Buzzard is *Falco asiaticus,* Latham, has not been supported hitherto, and must remain a doubtful point.

47. BUTEO PLUMIPES.

At present this must remain as a unique specimen of a very rare bird. Mr. Beavan states that Mr. Gurney agreed with Mr. Blyth that it was perhaps a melanism of *B. japonicus*; but Mr. Gurney cannot recall his having stated so, and certainly now considers it quite distinct. It has a small *Circus*-like bill; and the toes are remarkably short, much more so than in the smallest *B. japonicus*. A rather small *B. japonicus*, which I procured in Kashmir, and which is now in Lord Walden's collection, has an unusually small bill, and I was in hopes that it might turn out to be *B. plumipes*; but on comparison with the unique specimen in the British Museum it was found to have much longer toes.

Mr. Elwes informs me that Mr. Blanford, when in company with him in the interior of Sikkim, procured what at the time they thought might be *B. plumipes*; but no notice of this has yet been published. Of course it is very different from *B. pygmæus*, Blyth, which turns out to be *Poliornis poliogenys*, Lesson (*pyrrhogenys*, Schlegel). It was this species, and *not B. plumipes*, that I stated to be osculant between *Circus* and *Buteo**—though, as a matter of fact, Hodgson names *B. plumipes Circobuteo* in his MSS.

49. ARCHIBUTEO STROPHIATUS, Hodgson. The Asiatic Booted Buzzard.

Archibuteo cryptogenys, Hodgs.

A. hemiptilopus, Blyth.

I think that there is very little doubt that Hodgson's *A. strophiatus* is the same as his *A. cryptogenys*; and it is certainly the same as Blyth's *A. hemiptilopus*. Mr. Blyth insisted that Hodgson had sent *Aquila pennata* under the name of *A. strophiatus* †, and therefore gave the present bird a distinct name; but Hodgson was quite familiar with *A. pennata*, which he has figured under my Catalogue-name *milvoides*, and his sending that bird as the type of his *A. strophiatus* must therefore have been accidental. His specimen in the British Museum, sent under that name, perfectly resembles the type of Blyth's *A. hemiptilopus*; and I fancy the lengthened nasal plumes of the specimen, figured in the 'Calcutta Journal of Natural History' as nearly concealing the cere, were due to individual variety, as they do not appear in the two specimens I have examined.

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* *Vide* Hume's 'Scrap-book,' p. 285.

† Though, I find in his earliest paper on the subject, he does not state so, but merely that he strongly suspects it to be the same.

50. CIRCUS CYANEUS.

I have killed this bird in Deyra Doon; Blanford has recorded it from Central India, and Hume from various parts of the North-west Provinces and Punjab.

53. CIRCUS MELANOLEUCOS.

Hume states that this Harrier is very rare or unknown in the North-west Provinces; and Blanford says the same as to Western India. A male measured as follows:—Length 17½ inches, expanse 42, wing 14, tail 9, tarsus 3.

The female, contrary to what I state in the text, and to Mr. Blyth's published opinion, much resembles the same sex in other species. One in the Paris Museum, sent from China by Père David, was 18 inches long, wing 14½, tail 9¼, tarsus 3¼. It has the upper parts umber-brown; the feathers of the head were rufous and centred dark; chin and ear-coverts pale brown; the throat and ruff-feathers white, with brown centre; plumage beneath rufous-brown, the shafts slightly darker; quills dark brown; the tail pale rufous-brown, banded with dusky brown; the feathers of the lower part of the abdomen, thigh-coverts, and under tail-coverts broadly edged with creamy white.

I killed a Harrier at Suddya, in Upper Assam, which in coloration very closely resembles *C. spilonotus*, Kaup, from South China, the Philippines, Singapore, figured in 'The Ibis' for 1863, pl. 5. Its measurements in the flesh were:—length nearly 20 inches, expanse 46, wing 15, tail 9¾, tarsus rather more than 3, middle toe with claw nearly 2.

It is a good deal smaller than true *C. spilonotus*; and Mr. Gurney, after carefully examining it and some others, viz. one from Ceylon and two from the Philippines and Malacca, has come to the conclusion that it is in the second stage of coloration of the male of *C. melanoleucos*. Mr. Hume had previously come to nearly the same conclusion after he had examined the specimen noted above; but he makes the mistake of confounding this specimen, killed in 1869, with the bird killed in Purneah in 1863, and noted in the Appendix to my 'Birds of India,' which was in very different plumage.

I have, when in Southern India, seen *C. melanoleucos* in great numbers both on the Malabar coast and at Nellore, in the Carnatic, and I cannot recall seeing any specimens in the *spilonotus*-like plumage, and certainly never killed any. If this is the invariable second plumage of the male, it ought certainly to be nearly equally abundant with the fully adult bird.

My specimen, moreover, which may be certainly presumed to be a male, though it was not examined, is decidedly larger than *C. melanoleucos*; but others in similar plumage from other localities (the Philippines), measured by Mr. Gurney, were not larger; so that the alternative conclusion I was going to suggest, that the Indian bird is a distinct species, can hardly be entertained. It is to be hoped that Mr. Hume will, by calling on his numerous supporters to send him all the specimens of *C. melanoleucos* they can collect, be enabled to settle the point of this state of plumage being the second year of the male, or otherwise. If the young bird which I shot in Purneah in July be the young of this species, of which, however, I cannot be certain, it points to the change of plumage of the young male from the female coloration to the adult state being concluded in one moult.

Mr. Gould has a specimen of a very large supposed male *C. melanoleucos* from Assam; wing 15½, tail 10, tarsus 3½ inches. The pale grey colour extends more over the carpal joint than in ordinary specimens, so that the whole shoulder appears white. It corresponds nearly in size with true *C. spilonotus*, but has the tarsus somewhat more slender and the foot smaller than in specimens of that bird; otherwise it might have been considered the fully adult state.

56 *bis*. MILVUS MAJOR, Hume. The large Indian Kite.
Milvus melanotis?

This species of Kite, lately described by Mr. Hume, appears to be very nearly similar to the *M. melanotis* of Japan. It is also, I believe, found in Northern China. It chiefly, perhaps, occurs in Northern India, but is recorded by Mr. Blanford from Central India.

Dimensions of one procured in India:—length about 22 in., wing 16¾, tail 10½, tarsus 2, middle toe alone 1½.

It only differs when adult (Mr. Gurney tells me) from *M. migrans* in never getting the grey head always found on the adult of the European bird; and, what is worthy of notice, specimens of the latter bird from South Africa and Madagascar, with the head grey, have not yet been observed by the same acute naturalist. I believe I have frequently seen this small Kite; and other observers have noted the small size of certain Kites procured in various parts of the country. Mr. Hume does not notice it in his 'Rough Notes;' but Mr. Gurney tells me that he has lately recognized it, and procured specimens.

56 *ter*. MILVUS AFFINIS, Gould*. The Lesser Indian Kite.

Mr. Gurney has seen specimens of what he considers undoubtedly this species from various parts of India.

57. PERNIS CRISTATA.

I understand that this species ought to stand as *P. ptilorhyncha*, Temminck.

Mr. Blyth has lately told me that all the recent specimens he has seen in Lower Bengal had the irides in the adult red, not yellow, as I think is the case always in Southern India, and also in the North-west Provinces, according to Hume.

60. STRIX JAVANICA.

This species should stand as STRIX INDICA, Blyth, *S. javanica* being an Owl like *S. candida*. *S. delicatula*, Gould, given as a synonym (on Kaup's authority), is a very distinct species.

61. STRIX CANDIDA.

I lately killed this Grass-Owl at Suddya, in Upper Assam. This specimen had the disk partially of a warm vinous-brown tint; the inner feathers of the ruff were pure white; the chin, throat, and breast pure fulvous. Length 14 inches, extent 46, wing 13$\frac{5}{8}$, tail 5. Bill pale livid fleshy; feet dingy livid. To this group (i. e. *Scelostrix*) belong true *S. javanica* above alluded to, *S. capensis*, *S. pithecops*, Swinhoe, from Formosa, very near to our bird, and another species from the Philippines, *S. amauronota*, Cabanis.

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* Birds of Australia, vol. i. pl. 25.

I quite agree with Mr. Hume, since my visit to the North-west Provinces, that Phillips's Owl, mentioned as *S. javanica*, does not refer to this bird, but to *Otus brachyotus*. The names of many of the species given in his list were inserted at hazard by Mr. Moore from their native names, or from their habits, as I fully show further on under *Kittacincla macroura*.

62. PHODILUS BADIUS.

Mr. Gray gives the bird from Nepal as distinct from the Malayan one, but I do not know on what grounds. Since my first volume was published I have procured it both at Darjeeling and on the Khasia hills. The latter one was brought to me alive, and I can therefore bear full testimony to the accuracy of the outline of the head and *quasi* ear-tufts given by Gould in his figure * from a correspondent.

I took a sketch of the head of the bird when alive, which I still possess.

The expanse of wing was about 32 inches; bill fleshy white; toes pale livid.

This curious Owl belongs to the *Syrniinæ*, and not to *Striginæ*, the disk being incomplete above.

63. SYRNIUM INDRANEE.

This species has lately been found in Formosa by Swinhoe, and undoubtedly belongs to this, the small race, as distinguished from the larger Himalayan Owl.

64. SYRNIUM NEVARENSE.

A specimen obtained on the Himalayas by Dr. Stoliczka had the wing 18 inches, tail 10$\frac{1}{2}$. Mr. Hume is inclined to doubt the distinctness of the Himalayan and southern race

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* Birds of Asia, pt. xxii.

S. indranee, and gives his largest Himalayan bird as not having the wing more than 15½ inches; but Stoliczka's measurements bear out mine.

65. BULACA SINENSIS.

This Owl must stand as B. OCELLATA, Lesson, true *B. sinensis* apparently belonging to the Malayan *Strix seloputo* of Horsfield.

66. SYRNIUM NIVICOLUM.

I consider the Himalayan bird barely separable from the European one, the only points of distinction being the rather larger size of Indian specimens, the transverse bars of the central tail-feathers being more distinct, and the transverse nuchal markings being more fulvous.

67. OTUS VULGARIS.

I have found this Owl by no means rare, in the cold weather at all events, in low jungles, from the near vicinity of Delhi throughout the Punjab. I generally came on a party of from five to eight perched in company on the lower branches of the common *Salvadora*.

68 *bis*. BUBO MAXIMUS.

This huge Owl must be added to our list, as stated at the end of vol. iii., Appendix, p. 870. It has been killed several times in the Himalayas, generally at a considerable elevation*.

69. URRUA BENGALENSIS.

I see that Blyth and Hume have adopted the generic title *Ascalaphia*, bestowed on the nearly allied North-African Owl, as suggested by myself.

In this case, perhaps, *Urrua* might still stand for the next species:—

70. URRUA COROMANDA, which differs in the proportions of its toes, having them longer and more slender than the last, and in its habits being much more arboreal. The extent of wing of one I lately measured in the flesh was 55 inches.

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* [See also Sclater's notice of the occurrence of this species on the Pâng-kông Lake, P. Z. S. 1860, p. 99.—ED.]

71. HUHUA NIPALENSIS.

This bird is certainly very distinct from the Malayan species, being very much larger; it is, however, a rare species. Beavan got it at Darjeeling, and mentions its attacking a native Shikaree of his without any provocation. Like the Malayan bird, the young of this is nearly white, with only a few dusky markings. I saw a young one, taken from the nest at Darjeeling in 1863, in possession of Capt. W. Fitzgerald.

71 *bis*. HUHUA ORIENTALIS, Horsfield. The Southern or Malabar Eagle-Owl.

Huhua pectoralis, Jerdon, Madras Journal, x. p. 89, pl. i.
Ptiloskelos amherstii, Tickell (nestling).
Strix strepitans, Temm. P. C. 174 & 229 (young).

Blyth states that he considers my *H. pectoralis* to be the same as the Sumatran and Javan birds; and Schlegel's account of the dimensions, and the narrow brown markings of the lower surface being "very close upon the breast," certainly point to the identity of the birds. Hume, I see, refers Tickell's Tenasserim bird to the Himalayan race.

72. KETUPA CEYLONENSIS.

This Owl has been recently found by Dr. Tristram in Palestine.

73. KETUPA FLAVIPES.

I have obtained two or three specimens of this fine Owl, all of which were procured on the Himalayas westward of Mussooree (one as far west as Kashmir), and generally at no very great elevation (4000–5000 feet). Mr. Hume, to whom I gave one specimen, must have misunderstood me to say that this species is confined to Nepal and Sikkim; for I stated distinctly that I never got it at Darjeeling, as indeed I imply in 'The Birds of India,' vol. i. p. 135 (though Mr. Elwes informs me that he procured one there); and I thought that I had mentioned the exact locality of the specimen I gave him, viz. from the banks of the river Towy, on the march from Mussooree to Simla in 1864.

The wing of one I measured in the flesh was 18½ inches, expanse 61, tail 9¼. Bill horny black; cere dirty greenish; legs yellowish grey; irides gamboge-yellow.

I have not seen this species from Cherrapoonjee, nor from anywhere to the eastward. The upper part of the tarsus is clad with short downy feathers.

74. EPHIALTES PENNATUS will stand as E. BAKKAMÆNA, after Pennant.

74 *bis*. EPHIALTES GYMNOPODUS, Gray.

Ephialtes spilocephalus, Blyth.

E. pennatus, Blyth, Cat., and Jerdon's B. of India (partly).

This species is distinguished, according to Hume, by the entirely naked feet, the conspicuously spotted plumage of the head, and the short wings, with fourth and fifth primaries longest.

Length 7 to 7·75 inches, wing 5·4 to 5·6, expanse 14·5 to 15, tail 2·75.

Hutton asserts that the double whistle so often heard in the hills, and attributed to *Glaucidium brodiæi*, is given by this *Ephialtes*. I cannot say any thing against this view from personal observation.

This species is stated to occur abundantly at from 5500 feet, on the outer ranges, into the far interior.

75. EPHIALTES LEMPIJI.

In accordance with Blyth's identifications, I placed all the Indian large Scops Owls under this name, though quite opposed to my previous opinions, as given in the 'Madras Journal' and my 'Illustrations of Indian Ornithology.' Later observations by various naturalists, and the numerous specimens since obtained from different localities, confirm all the previously recorded species; and others have, moreover, to be added.

I shall begin with the Himalayan forms:—

75. EPHIALTES LETTIA, Hodgson.

Confined to the Himalayas. Length of wing 6·5 to 7·2. "Toes quite bare, or only just overhung at their bases by the feet-feathers."

75 *bis*. EPHIALTES SEMITORQUES, Bonap.

Ephialtes plumipes (Hume).

Length 9½ to 10 inches, expanse 20, wing 6·7 to 7·3, tail 3. "The toes feathered in some halfway down the terminal joint, in *all* to the end of the subterminal joint."

This fine species was obtained by Mr. Hume from various localities of the north-west Himalayas. It appears to be very closely related to, if indeed distinct from *Scops semitorques*, Bonap., figured 'Fauna Japonica,' pl. 8. This is given by Schlegel in his Museum Catalogne as perhaps synonymous with *Scops lempiji* of India, *S. lettia* of Hodgson. The wing is given as 6 to 7 inches (French), tail $2\frac{9}{12}$ to $3\frac{1}{12}$. Plumes of the feet extending over the upper part of the toes, but "subject to fall off."

Although Schlegel has perhaps confounded this with true *S. lettia*, as he has no others from the Himalayas, it is, I think, clearly the Japanese bird figured in the 'Fauna Japonica,' and Hume's name will have to be dropped into a synonym. A comparison of specimens, however, is desirable.

75 *ter*. EPHIALTES GRISEUS, Jerdon.

Ephialtes lempiji pars, Jerdon, B. of India.

This race is from the Eastern Ghats and various other parts of Southern, Central, and Northern India. Length of wing 5·6 to 6·63 inches.

Its general tone of plumage is much greyer than that of any other race. Irides, according to Hume, brownish yellow, or brown, or pure yellow.

75 *quater*. EPHIALTES MALABARICUS, Jerdon, Ill. Ind. Orn. The Malabar Scops Owl.

Ephialtes jerdoni, Walden.

E. lempiji pars, Jerdon, B. of India.

Hume gives the fresh specimens as of the following dimensions:—

Length 8 to 8·24 inches, wing 5·95, expanse 16·5, tail 2·75. Bill yellowish horny; feet yellow; irides dark yellow.

This is now considered quite distinct from the Malayan bird.

73. ATHENE CUCULOIDES.

A Japanese and Chinese race has been noted by Blyth to differ chiefly in the bars on the tail being fewer, as well as the markings on the quills. He calls it *A. whiteleyi*; and as in Burmah *Athene cuculoides* is recorded as being found at the level of the sea, true *A. cuculoides* being exclusively a mountain bird, he suggests that the Burmese race may be the same as the Japanese bird.

76. ATHENE BRAMA.

It is most probable that the bird stated in 'The Birds of India' to have come from Western Asia was not *A. brama*, but *A. persica*, Vieillot (*bactriana*, Blyth, *gymnopus*, Hodgson), also occurring in Tibet and Afghanistan, &c.

I may, however, state that the bird referred to in Gray's Catalogue of Hodgson's collections as *nudipes*, Gray, *gymnopus*, Hodgson, and with a reference to the drawing, pl. 80 of Hodgson's drawings, is in reality marked on the drawing in Hodgson's handwriting "*lagopus*," and most unmistakably represents *Nyctale tengmalmi*.

This latter bird is stated to have been found in the Cachar of Nepal, *i. e.* the inner Himalayas, and will thus require to be added to our Avifauna as

81 *bis*. NYCTALE TENGMALMI.

Mr. Gurney informs me that there is a specimen of *Athene noctua* (*passerina*, auct.) in the Norwich Museum labelled from Poona. I think that the history of this specimen ought to be more fully investigated before it is admitted into our Avifauna.

80. GLAUCIDIUM BRODIÆI.

This species extends through the Khasia hills and Burmah to Tenasserim. Stoliczka has found its food to consist of lizards and frogs, as well as insects; and Mr. Thompson, quoted by Hume, gives its food as birds, mice, and *Cicadæ*. Now this bird may not live *chiefly* on insects as I state, which statement Mr. Hume objects to; but as both the observers quoted above give insects, I think we may conclude, at all events, that they generally form part of its food, notwithstanding that Mr. Hume did not find insects in three specimens which he examined, though he does not state what they *did* contain.

As to the double note of this Owl, hitherto believed by all to belong to it, I will not attempt to go against the testimony of such an excellent observer as Major Hutton. He states the call of the Pigmy Owl to have four notes, viz. *whĕw-whĕw-whĕw-whĕw*. I am quite familiar with this call, which I was given to understand by native Shikarees and others to be the note of *Athene cuculoides*, whose note is not noticed either by myself or Mr. Hume. Geographical distribution must be called in. If *Ephialtes gymnopodus* be never found in Darjeeling or the Khasia hills, at both which places this call is commonly heard, especially at Darjeeling, we must still suspect some error in the later observations.

Mr. Gould, who figured this Owl, B. Asia, pt. xxii. pl. 4, mentions that he has a bird from Assam which he considers distinct and calls *Athene minutilla*.

An allied species from Sumatra is noted by Bonaparte as *Athene sylvatica*, S. Müller. Swinhoe inclines to consider a bird from Formosa distinct from the Indian one, and has named it *A. pardalota*. Mr. Hume also mentions having obtained a bird much less spotted, which he had sent, under the name of *immaculatus*, to M. J. Verreaux for examination.

81. NINOX SCUTELLATUS.

I have lately looked over with Mr. Gurney a number of specimens from various localities from China to Singapore, and we could not make out any marked difference among them. Those from Amoy were slightly larger than the others, and the specimens from Singapore somewhat smaller, the specimens decreasing in size regularly from north to south; but the difference of even the extreme sizes is not very great, nothing like, for example, the difference of *Syrnium indranee* and *S. newarense*, or of *Huhua nipalensis* and *H. orientalis*.

I have very little doubt that Tytler's *N. affinis* does not differ; and indeed that is evidently Mr. Hume's own impression.

An allied species is *N. madagascariensis*, Bp. (see Gurney, Ibis, 1869). This form is very close to, if distinct from, the Indian bird.

Schlegel gives three races (one from Japan, one from India, and one from Borneo), without any material distinctions except slight differences of size; but a species from the Philippines appears distinct.

Mr. Hume will probably have learned long before this that *Strix superciliaris*, V., stated to have been sent from Coromandel (India), which he thinks to be quite probable, is a Madagascar bird.

82. HIRUNDO RUSTICA.

I think it probable that the more eastern races of this Swallow may be separated as *H. gutturalis*, with which it appears that *H. fretensis*, Gould, from North Australia and Java is identical. It is on the average slightly smaller, with shorter wing than the European bird; and the rufous on the throat varies much in extent. A few pairs certainly breed in Sikkim and other parts of the Himalayas, at from about 4000 to 5000 feet of elevation. Major Godwin-Austen found it breeding at Asalu in April, and noted its small size compared with *H. rustica*, the extent of wing being only 12 inches. The Swallow of Kashmir that breeds there *abundantly* is certainly true *H. rustica*.

82 *bis*. HIRUNDO TYTLERI, Jerdon, B. of India, Appendix, vol. iii. p. 870.

This Swallow is certainly very close to *H. cahirica* of Palestine, Egypt, &c., but is somewhat smaller, and with the black gorget less developed. It in fact bears the same relation to *H. gutturalis* that *H. cahirica* does to *H. rustica*, and may be said to be a localized race of the former, breeding in the plains. It has not been found elsewhere than Dacca that I am aware of.

83. HIRUNDO DOMICOLA.

This bird is figured by Mr. Gould, B. of Asia, pt. xx. pl. 13. It appears to be very close to true *H. javanica*; but that is said to be a good deal larger bird: the dimensions are given in the 'Voyage of the Novara,' as length 6½ inches, expanse of wings 11·9; but perhaps the bird referred to there may be *H. gutturalis*.

84. HIRUNDO FILIFERA must stand, it appears, as H. RUFICEPS, Lichtenstein; but as the African race is stated by Gould to differ in some points from the Indian one, the former name may perhaps still hold good. It is figured by Gould, B. of Asia, pt. xviii.

85. HIRUNDO DAURICA.

Two races are now allowed by all ornithologists to occur in India. One, 85, is true *Hirundo* or *Cecropis daurica*, figured by Gould, B. of Asia, pt. xx. pl. 9; the other will stand as

85 *bis.* CECROPIS ERYTHROPYGIA, Sykes.

It is this race which commonly breeds in Southern India, whilst in the Himalayas *H. daurica* is stated to be the species that breeds; but of this I am by no means fully satisfied. A third race has been suspected by some ornithologists, which some consider to be *H. rufula.*

85 *ter.* CECROPIS HYPERYTHRA, figured by Gould, B. of Asia, pt. xx. pl. 11, may be said to be a localized rufous race of this group. It appears, however, to extend also to Malacca, as a specimen in Lord Walden's collection from that locality appears to be the same bird.

86. HIRUNDO FLUVICOLA.

Hirundo empusa, Gould.

This Swallow has been assigned by Gould to a distinct genus, *Lagenoplastes*, and is figured by him in B. of Asia, pt. xx. pl. 14. The bird formerly named by him *empusa* is the bird mentioned in 'The Birds of India,' on Adams's authority, as occurring in the Punjab; but it turns out to be the same bird, as the white spots on the lateral tail-feathers are, it appears, chiefly found on old males, the females and young birds being without these spots. Mr. Blanford has recently found it in the same localities as the first procured by myself. He also observed apparently some of the very colonies of nests I had noted, and fortunately procured the eggs. He notices that they "invariably" build beneath an overhanging rock or bank over deep water, returning to the same spot every year. I observed one colony of nests near Nagpore, however, where the nests, which were in a sort of cavern, were easily reached by the hand from the shallow water at the bottom of the cave; and a greater deviation from this will be noticed further on.

I found this Swallow exceedingly abundant in parts of the North-west Provinces of India, less so perhaps in the Punjab. I found it breeding on bridges over the Ganges canal, and on the great Solani aqueduct close to Roorkee; I also, to my surprise, found it breeding under an archway in the town of Dehra Doon. Mr. Hume says that "it abounds wherever there is water, cliffs, or ruined buildings." I never saw it in Kashmir, where it was observed by Adam's to be "common."

87. COTYLE RIPARIA.

Mr. Blanford recently procured it in Central India; and I have on several occasions seen one or two birds of this species in the upper provinces of India; but it is certainly somewhat rare throughout India.

88. COTYLE SUBSOCCATA.

I consider this to be a very doubtful species, and that it ought to be expunged from our list. One of Mr. Hodgson's drawings with this name attached represents apparently *C. riparia,* but with the tuft of short feathers behind the tarsus extending all its length.

91. COTYLE RUPESTRIS.

I observed this Martin in the valley of the Sutlej, and in the Sind valley of Kashmir. Mr. Blanford found it in Central India flying round a rocky hill, at no great elevation, and also at Khandalla on the edge of the western Ghats.

92. CHELIDON URBICA.

Irby states this Martin to be common in Oudh in the cold season; and Tickell says that they occur at times at Moulmein, but are not regular in their appearance.

93. CHELIDON CASHMIRENSIS. Figured by Gould, B. of Asia, pt. xx. pl. 12.

I found this Martin breeding on a rock between Mattiana and Nagkandah on the Sutlej valley in June; and Stoliczka also observed it breeding near the same locality, perhaps at the very same spot. I also found it in the Sind valley in Kashmir, in small parties; but, as a rule, I found it rare in Kashmir, notwithstanding its name. Is *Chelidon lagopoda* (Pallas), Swinhoe, B. of China, no. 129, distinct from this bird?

95. ACANTHYLIS SYLVATICA.

Mr. Hume has received specimens of this Swift from Coonoor, Neilgherries, and Gurhwal.

97. ACANTHYLIS CAUDACUTA.

This is the *Silliang-tiphi-timbo* of the Lepchas of Darjeeling. Dr. Tristram appears to doubt the possibility of this Swift (or any other bird) exceeding *Cypselus melba* in rapidity of flight. Mr. Blanford, however, fully confirms my views *, and indeed intensifies them considerably; and Major Godwin-Austen also, in his recent catalogue, states that he saw a large Swift which he presumed to have been *Acanth. caudacuta* flying with great velocity: " they shot past *like lightning*."

98. CYPSELUS MELBA.

Since the publication of 'The Birds of India' I have seen this species occasionally at Darjeeling.

99. CYPSELUS APUS.

Going up the valley of the Sutlej from Simla I first met with this bird at Serahan, and thence occasionally all the way to Pangi; but it was in the Lipi and Asrang valleys that I found it most abundant. One I killed near Lipi was sent home to Mr. Blyth, who recorded it, and gave the specimen over to Mr. Gould. He had previously only seen it from Afghanistan. This last naturalist considers it distinct from the European bird, it being of somewhat larger dimensions, the wing especially being longer. One I measured when fresh was 7 inches long, wing $7\frac{1}{4}$, expanse $16\frac{3}{4}$, tail $3\frac{1}{4}$, forked for $1\frac{1}{4}$ inch.

101. CYPSELUS LEUCONYX.

Stoliczka remarks that in some specimens of this species there was no trace of white on the claws. This character indeed is exceptional, and the name is therefore unfortunate. Dr. S. also states that a slight pale supercilium is generally traceable, and that the head and neck are paler than the back. The wing measures

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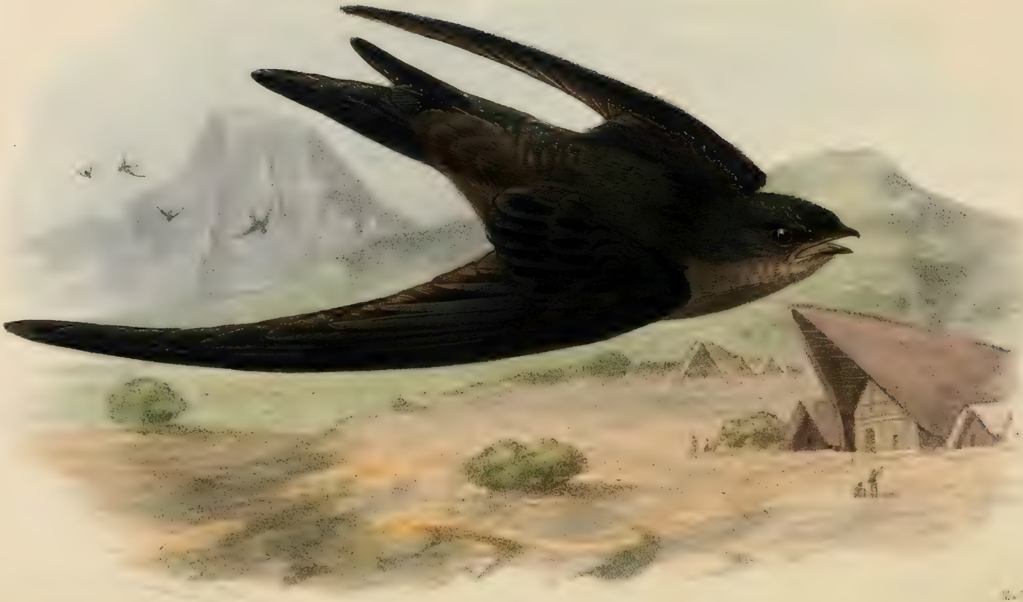
* J. A. S. B. 1869, p. 169.

Ibis 1871 Pl X



J. G. Keulemans del.

M & N Hanhart imp.

CYPSELUS INFUMATUS.

6¼ inches to 6⅝. I have frequently seen this Swift in the North-west Himalayas, generally in the interior. It occupies in summer the ranges of hills between the outer ranges, where *C. affinis* is abundant, and the higher and more interior hills occupied by *C. apus.*

101 *bis.* CYPSELUS PACIFICUS.

Cypselus vittatus, Jard. Ill. Orn.

I found this Swift flying over hills in Upper Assam, and also in Cachar, and observed apparently the same bird at Shillong on the Khasia hills in large flocks towards the end of the rains.

101 *ter.* CYPSELUS ACUTICAUDA, Blyth.

I have examined the type of this species in the Derby Museum at Liverpool. It corresponds very closely with *C. pacificus*, rather than with *C. leuconyx*, to which Blyth compares it. It in fact chiefly differs in the total absence of the white rump; the lower parts are banded just as in that species. I can find no drawing of this bird in Hodgson's drawings, though the specimen bears his label. The dimensions are as follows:—Length about 7½ inches, wing 7⅜, expanse 21.

102. CYPSELUS INFUMATUS. (Plate X.)

Cypselus infumatus, Sclater, P. Z. S. 1865, p. 602.

Cypselus tinus, Swinhoe, Ibis, 1870, p. 90.

C. tectorum, Jerdon, Proc. As. Soc. Calcutta, 1870, p. 71; Godwin-Austen, Cat. Birds in Journ. As. Soc. 1870, p. 94.

The Palm-roof Swift.

Major Godwin-Austen procured this interesting Swift on the Naga hills, and subsequently on the Garo hills, where it had also been obtained by a native collector employed by Dr. Anderson. The Garo hills are a direct continuation of the Naga hills, the Khasia and Jynteea hills, however, intervening, where this Swift is not known. The more highly civilized Khasi race have better houses than their neighbours on each side, who use huts thatched with palm-leaves. On these roofs this Palm-swift invariably builds its nest.

Mr. Hume, who saw the specimen I was taking home, subsequently identified it, doubtfully, with Sclater's *C. infumatus*; and on comparison of the unique specimen existing in England of that Swift, they were found to be identical, and Mr. Hume's ingenious surmise proved correct.

103. COLLOCALIA FUCIPHAGA.

The expanse of wings of one killed lately was 12¼. In the Andamans, where it is common, it has taken to building in houses, preferring the inner and darker rooms.

Tytler's *C. affinis* is considered to be *C. linchi*.

106. OTOTHRIX HODGSONI.

Mr. Blyth considers that *Otothrix* is simply the male of *Batrachostomus*. This view would reconcile the apparent differences of the drawings of *Podargus javanensis*, as given by Horsfield, and the same bird as figured by Shaw in its male or whiskered plumage. If this view is confirmed, *Otothrix hodgsoni* is probably the same as the bird alluded to by Mr. Blyth under *Batrachostomus affinis*, from Darjeeling, but *distinct* from that species.

114. LYNCORNIS CERVINICEPS, Gould.

Figured by Gould, Icon. Av. pt. ii. pl. 14.

The Giant Night-jar.

A fine specimen of this beautful Night-jar was obtained by the Rev. W. Drawbridge at Darjeeling. The Lepcha Skikaree who procured it stated that he killed it in the warm valley of the Teesta. It had not previously been observed north of Awakan.

Length of specimen about 14 inches, wing 12, tail 8, bill at gape 1⅝.

[To be continued.]

XXVIII.—*Remarks on the Avifauna of the Sandwich Islands.*

By P. L. SCLATER, M.A., Ph.D., F.R.S., &c.

SOME years ago I commenced to collect materials for an account of the terrestrial vertebrates of the Sandwich Islands, as far as they could be made out from existing authorities. My MS. has, however, remained unfinished, having been left in this state mainly in the hope that I might be able to induce a correspondent in these islands, to whom I had applied, to furnish me with some further information on the subject. But in this I have not succeeded. Meanwhile Mr. Sanford B. Dole, of Honolulu, has published, in the 'Proceedings of the Boston Society of Natural History,' a "Synopsis of the Birds hitherto described from the Hawaiian Islands"*, and has thus saved me further labour on this subject. As, however, my views do not in every respect agree with those of Mr. Dole, and as, moreover, Mr. Dole's memoir appears to have escaped the usually observant eye of the ex-Editor of 'The Ibis,' I request leave to offer a few remarks on the Avifauna of the Sandwich Islands to the readers of this Journal, principally in illustration of Mr. Dole's article.

Mr. Dole appears to me to have executed his task of compilation in a very satisfactory manner, and to have embraced in his list all the species of birds that have been stated by naturalists to be met with in the Sandwich Islands. The total number of such species enumerated is 48, which, however, Mr. Dole considers to represent "little more than half the Avifauna of the group." By far the greater number of the birds of the Sandwich Islands, he observes, "are found in the mountain-region of the interior, and have thus escaped the naturalists of the various exploring expeditions, whose limited time has been spent on the sea-shore." It is much to be regretted that Mr. Dole (living, as he appears to do, at Honolulu) has not found leisure to explore these mountain-recesses, and to make additions to the list of species which have already been recorded by previous authorities. I trust, however, that he is preparing to do this, and that the present article is only intended as a basis upon which he may build for us a more complete account of the Hawaiian Avifauna.

The Accipitres enumerated by Mr. Dole embrace only three species—one of the diurnal and two of the nocturnal division. The small Osprey, *Pandion solitarius* of Cassin, has been considered by some authorities to be even generically distinct from the ordinary species. Others, however, have been inclined to believe that it would turn out to be only a small variety of the Common Osprey, one of the most universally distributed of known birds. Until more examples of it are obtained (the single specimen hitherto known is in the collection of the Philadelphian Academy of Natural Sciences) I think we cannot venture to disagree with Mr. Cassin, who regards it as an excellent species, peculiar to the Hawaiian fauna. But the two Owls called by Mr. Dole *Strix delicatula* and *Brachyotus galapagoensis* are both widely distributed species. The latter is said by Mr. Cassin to be "certainly identical with the Chilian form" of this cosmopolitan bird, and, if such is the case, would in my opinion be specifically inseparable from *Otus brachyotus*, to which species I refer all the American Short-eared Owls that have come under my examination.

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* Proc. Boston Soc. Nat. Hist. vol. xii. p. 294.

Strix delicatula is the ordinary Pacific form of *S. flammea*[*].

We now come to the great land-order Insessores or Passeres, by examination of which the peculiarities of any Avifauna are usually best determined. Mr. Dole gives us a list of upwards of 20 supposed Hawaiian species of this order, and refers these to seven different families. Beginning with the "Meliphagidæ," he enumerates four species of *Moho*, or, as I should prefer to call it more classically, *Mohoa*. Three of them are undoubtedly good species of the genus, which is one of the most characteristic forms of the Hawaiian Avifauna—namely, *M. nobilis* (Merrem), *M. braccata* (Cassin), and *M. apicalis*, Gould. But I am very doubtful whether the *Entomyza angustipluma* of Cassin can be properly referred to this genus, and in my MS. have proposed for it the new generic term *Chætoptila*[†]. I have examined the typical specimen of this bird, which was in Mr. Cassin's hands when I was at Philadelphia in 1856.

Another peculiar Hawaiian type is the genus *Drepanis* with its curious hooked bill, which Mr. Dole refers to the "Promeropidæ," and of which he mentions four species. Of these, *D. coccinea*, *D. pacifica*, and *D. sanguinea* are undoubtedly good, but the last mentioned is perhaps generically separable under Cabanis's term *Himatione*[‡]. The so-called *D. flava* is probably the female of *Himatione sanguinea*. Nearly allied to *Drepanis* is the still more extraordinary type *Hemignathus*, with its upper mandible much longer than the lower. Of this there are likewise three known species—*H. olivaceus, H. obscurus,* and *H. lucidus.* As regards *Myzomela nigriventris,* which Mr. Dole places next, there can be little doubt that there has been some error in the introduction of this Feejeean and Samoan species into the Hawaiian Ornis.

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[*] *Cf.* Finsch. & Hartl. Orn. Central-Polyn. p. 11.

[†] *χαίτη*, *coma*; et *πτίλον*, *pluma*.

[‡] Mus. Hein. i. p. 99.

Under the head Muscicapidæ, Mr. Dole mentions *Muscicapa maculata,* Gm., as "an uncertain species," under which category I am content to leave it.

As "Turdidæ," belonging to this Avifauna, Mr. Dole gives *Tatare otaitiensis* and *Turdus sandvicensis.* The first of these birds is a well-known type of the Central-Polynesian fauna, but, as I believe, quite foreign to that of the Sandwich Islands. The second belongs to the category of doubtful species, nothing being known of it since the days of Latham [*].

"Ampelidæ," as I consider them, are certainly not to be met with in the Sandwich Islands. Yet Mr. Dole gives two species of this family as occurring there (*Tænioptera obscura* and *Eopsaltria sandvicensis*), both being referred to genera utterly foreign to the fauna of this group. For the former of these, which is figured in Cassin's edition of Peale's work (pl. 9. fig. 3) I have already proposed the generic name *Phæornis* [†]. The latter, Dr. Cabanis has long ago shown to form a well-marked type of the Muscicapidæ, for which he proposed the name *Chasiempis* [‡]. It is possible these two birds may belong to the same genus, in which case *Chasiempis* will be the first generic name for them; or they may even be specifically identical.

Of Corvidæ there appears to be undoubtedly one Hawaiian species—*Corvus hawaiensis* of Peale. Whether this is the same as Gmelin's *Corvus tropicus* is very doubtful [§].

Of Finches (Fringillidæ) Mr. Dole mentions four species as occurring in the Sandwich Islands—*Hypoloxias coccinea, Psitti-*

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[*] It is the "Sandwich Thrush" of Latham, from Sir Joseph Banks's collection.

[†] Ibis, 1859, p. 327.

[‡] Not *Chasiempsis,* as written by Hartlaub, Gray, and Dole, but *Chasiempis* (*ἐμπίς musca*), as originally proposed by Cabanis in Wiegm. Arch. 1847, i. p. 207.

[§] *Cf.* Cassin, Orn. U. S. Expl. Exp. p. 120.

rostra psittacea, Emberiza sandvicensis, and *E. atricapilla.* The two former of these are undoubtedly valid Hawaiian species, but in my opinion have nothing to do with the Fringillidæ, being merely aberrant forms of the same type as *Drepanis* and *Hemignathus.* The two latter are both North-American species, and have only been attributed to the "Sandwich Islands" from this locality having been confounded by Latham with "Sandwich Sound" on the north-western coast of Arctic America. An earlier generic term available for *Hypoloxias* (Bp. Consp. i. p. 518, 1850) is *Loxops* (Cabanis, Wiegm. Arch. 1847, i. p. 330); and the bird should therefore be called *Loxops coccinea.*

According to my views, therefore, there are not more than 15 well-established species of Hawaiian Passeres, referable to 3 families, namely:—

I. MUSCICAPIDÆ.

1. *Chasiempis sandvicensis.*
2. *Phæornis obscura.*

II. MELIPHAGIDÆ.

3. *Mohoa nobilis.*
4. —— *braccata.*
5. —— *apicalis.*
6. *Chætoptila angustipluma.*
7. *Drepanis coccinea.*
8. *Drepanis pacifica.*
9. *Himatione sanguinea.*
10. *Hemignathus olivaceus.*
11. —— *obscurus.*
12. —— *lucidus.*
13. *Loxops coccinea.*
14. *Psittirostra psittacea.*

III. CORVIDÆ.

15. *Corvus hawaiensis.*

The whole of these genera are, so far as I know, restricted to the Sandwich Islands, except *Corvus.* All the species are, I believe, undoubtedly confined to the Hawaiian Archipelago.

Several Parrots have been attributed to the Sandwich Islands. Mr. Dole says "it is very doubtful" whether any really occur there. I am quite of Mr. Dole's opinion on this subject.

We now come to the Water-birds, or Grallæ, Herodiones, Anseres, and other allied groups. Mr. Dole has compiled the published records of the occurrences of these birds in the Sandwich Islands with much exactness and assiduity. Most of them are widely spread Polynesian species, such as *Ardea sacra, Actitis incana,* and *Anas superciliosa,* or such quasi-cosmopolitan rangers as *Charadrius pluvialis* and *Strepsilas interpres.*

There are, however, a few peculiar Sandwich-Island forms amongst them, such as the Hawaiian Coot (*Fulica alai*) and the Sandwich-Island Goose (*Bernicla sandvicensis*), which has been introduced into Europe, and breeds in our Zoological Gardens. The Water-birds, however, are of much less value in forming an estimate of the nature of any Avifauna than the Land-birds. I will therefore pass them by somewhat summarily, and proceed to draw the following conclusions upon the Hawaiian Ornis:—

1. The Avifauna of the Hawaiian group of islands, so far as it is hitherto explored, comprehends about 40 species, of which about 18 are Land-birds and 22 are Water-birds.

2. The Land-birds consist of 3 Accipitres and 15 Passeres. There are no *Pici, Cypseli, Coccyges*, or *Psittaci.*

3. The Accipitres comprehend 1 peculiar and 2 wide-ranging species. The supposed peculiar species, however, requires further investigation.

4. The Passeres consist of 15 well-established species, all peculiar, or "autochthones," as such natives may be termed. These belong to eight or nine generic forms, of which one only occurs elsewhere.

5. Out of the 15 Passeres, 12 belong to the Meliphagidæ, and are mostly remarkable for the extraordinary forms of their bills. They may perhaps be ultimately found to constitute a special section of the Meliphagidæ, or even a distinct family of themselves, like the Helicterine Land-shells of the same archipelago [*].

In conclusion, I may add that a more thorough investigation of the fauna of this remarkable group of islands is in every way desirable. It is to be hoped that Mr. Dole, who has bestowed so much pains upon the compilation of the list upon which my remarks have been founded is already engaged upon this task. It is especially desirable that the mode of distribution of the indigenous species amongst the different islands should be carefully attended to. The species and even the genera of the *Helicterinæ* are in many cases confined to one or more islands; and the same may be the case in the birds likewise.

One of the four British stations fixed upon for the observation of the coming transit of Venus in 1874 is Oahu, one of the Sandwich-Islands group. In an article in 'Nature' I have already put forward the view * that this would be a specially favourable opportunity for a thorough examination of the whole fauna and flora of the Hawaiian Archipelago. I now beg leave to direct the attention of the readers of 'The Ibis' to my published remarks on this subject, and to request their advice and assistance in carrying out my plans.

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[*] See Mr. Harper Pease on this subject, P. Z. S. 1869, p. 644.

XXIX.—*Letters, Extracts from Correspondence, Announcements, &c.*

We have received the following letters addressed to "The Editor of 'The Ibis'":—

Copenhagen, 25th March, 1871.

Sir,—Allow me to make an observation respecting a statement in your excellent article "On the Psittacidæ of Central America," in the last number of 'The Ibis.' It is there remarked that the *Ara macao* (L.) has not been sent from Mexico by any naturalist since the days of Deppe and Schiede. It may therefore interest you to learn that my late friend, the well-known botanist and Mexican traveller, Dr. Liebmann, brought back in 1843 a specimen of that species, which is still in the Copenhagen Museum. The exact locality where he got the bird is unfortunately not recorded; but Liebmann visited only two of the provinces of Mexico, viz. Vera Cruz and Oajaca, and in some sketches on the physical conditions and the vegetation of the Pacific Coasts of Mexico, which he published long ago in a Danish periodical, I find the remark that "Macaws" are abundant in the forests in the vicinity of Guatulco, on the western slope of the great Cordillera. The bird in question may therefore very likely have been obtained in these forests; and your suggestion that, if *Ara macao* really occurs in Mexico at all, it is only to be found in the forest-country on the Pacific side of the Isthmus of Tehuantepec, seems so far quite justified.

Yours truly,

J. Reinhardt.

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* 'Nature' for March 24, 1870.

Whitehall, Colchester, 28th April, 1871.

DEAR SIR,—I beg leave to offer a few remarks on Dr. Jerdon's supplementary Notes to 'The Birds of India,' in which he has done me the honour frequently to mention my name.

GYPAËTOS BARBATUS.

I entirely concur with Dr. Jerdon and my friend Mr. Hume in considering this Vulture most nearly allied to the *Neophron.* I have had opportunities during several years of narrowly observing its habits at all seasons of the year, in the interior of the Himalayas, in the plains of the North Punjab, and in the Salt range; and I cannot believe what "it is said at times" to do in the way of "carrying off Pheasants, Chuckor Partridges, and occasionally young Lambs." I have never witnessed a sign of any attempt by it to carry off any living creature whatever; nor could I hear from any European observers, or from natives worth talking to on the subject, that their experience varied from my own. Moreover its *Neophron*-structure and movements are entirely at variance with these stories of its active rapacity, which I look upon as emanating from delusions of the ignorant. Captain Cock, now Station Staff Officer at Thelum, in the Salt range, took the eggs from a nest in the lower ranges of the Himalaya, two marches from Rawul Pindee.

FALCO PEREGRINUS.

I think it is beyond doubt that no instance of the breeding of this Falcon has occurred within the limits of British India. My careful inquiries among natives of rank, as well as among professional falconers and birdcatchers, during a recent sojourn of more than three years and a half in Peshawur and its vicinity, lead me to believe that it does not breed even so near India as Swat, Bonair, Cabul in Affghanistan, or in any of the neighbouring hill-countries.

FALCO PEREGRINATOR.
FALCO ATRICEPS.

I hardly understand Dr. Jerdon's statement that "another species of Falcon appears to have been mistaken for it" (speaking of *F. peregrinator*) "both by Mr. Hume and Col. Delmé Radcliffe." Mr. Hume and I were at issue on the subject of an alleged species distinct from *F. peregrinator*, which he proposed to call *F. atriceps*. It appears to me that, if there is any distinction between the race from Northern India and that from Central and Southern India, the difference is only a local one, in a species not migratory, and breeding over a very large tract of country, and is insufficient to constitute two species. In the many examples I have had, living, dead, or as skins (principally, it is true, from Northern or North-western India), I have had specimens differing widely from each other, yet hardly so considerably as I have often seen in the case of a lot of living Peregrine Falcons all before me at one time, say from 15 to 25, and all captured or taken from the nest in the British Isles. Experienced falconers are able to point out among a lot of young Falcons the individuals which have been taken from eyries from which they have been in the habit of receiving young birds, while the uninitiated observer will frequently inquire, on seeing two Falcons sitting together, "Are these two of the same species?" the contrast is so great. A small close-feathered "black" Falcon with a short tail is a very different-looking bird from a large loose-feathered "white" Falcon; and the varieties in colour and make among a lot are endless. I have now two Falcons sitting on the lawn here; and nearly every person who sees them asks if they are of one species. I remember that in letters, as well as during a visit to me at Attock last year, Mr. Hume dwelt upon the *shade of blue* in the upper plumage of adult birds, claiming for his *F. atriceps* a browner shade, as distinct from what he termed the Peregrine blue. Now Peregrines, in adult plumage, like Shaheens, are of very varied shades of blue. Moreover, in observing this blue shade, very strict regard must be had to the time elapsed since moulting in each specimen; for this blue shade is evanescent, more or less, and the sun of India and wind and weather will cause a Falcon, wild or tame, to present a very different appearance in March to that she presented in October of the preceding year. However blue she may have been in October, she will have lost a good deal of it for a browner shade by March. So I regard this blue shade as a very treacherous guide, equally with other alleged differences.

I have besides seen some Shaheens in North-west India, notably one that I caught at Futtehghur, on the Ganges, in 1866, quite as blue as any Peregrine of the dark variety I ever met with. While on the subject of local differences between birds of one species, I may mention that I know of two parishes in Hertfordshire adjoining one another, in which the Partridges (*Perdix cinerea*) differ so considerably that after a day's shooting an experienced eye will separate the birds according to the ground they were killed on. One of these parishes contains hilly ground with light chalky soil; the other lies low, and the soil is heavy clay.

I do not see that the Australian Falcon, *F. melanogenys*, is allied to *F. peregrinator*. It is considerably larger, with the proportions of the Peregrine, not the large beak and feet of *F. peregrinator* and *F. babylonicus*. With regard to the curious Bat-killing habit of the Shaheens, it is to be noticed that they do not kill them to eat; and I have seen a hungry Shaheen refuse them. I have frequently seen *F. peregrinator* and *F. babylonicus*, after taking perch for the night with distended crops, dashing off again and again after a Bat, returning in a minute or so with it in the feet to the perch, and soon dropping it dead below, till darkness put at end to their sport. Except in the case of one tiercel Peregrine, which when flying at the lure one evening at Moradabad, suddenly left the lure to make some fifty stoops at a passing Bat, I never saw a Peregrine, wild or tame, look at a Bat; and at the time this tiercel was very keen, and eager to fly at any thing he might see.

FALCO SACER.

I concur with Dr. Jerdon in believing that this Falcon is never seen in Cashmere. I could not hear of it in that country. The Falcon alluded to by Dr. Jerdon, about which I wrote to him, was certainly larger than any Cherrug I ever saw; and at the time I had this one I had many large Cherrugs in my possession. She was marked all over the upper parts and back exactly like a female Kestrel; her breast was white, with few markings on the sides, and a very few bell-shaped spots. The present Ameer of Cabul, Shere Ali, informed me that *F. sacer* frequently breeds in Afghanistan, and offered to send me some nestlings. As this Falcon is no favourite of mine, I declined the offer; but he sent down some to the Regiment of Guides quartered at Hoti Murdan, and these birds were flown with success at ravine-Deer.

FALCO BABYLONICUS.

This Falcon is very highly prized about Rawul Pindee, Peshawur, Euzussaie, and Kohat (it is flown from the air at Ducks); and I have lately had some very good Hawks of this species. The old Falcon alluded to as belonging to Captain Griffiths was fifteen years old when I saw her in fine flying order at Peshawur, her previous owner having moulted her seven times, and she had moulted seven times in Captain Griffith's possession. She was a perfect game-Hawk. I ought not to have said that I had seen some examples of this Falcon with heads "as red as in *F. chicquera*," but "nearly as red." But there are always grey markings, more or less, through the rufous, however strong the rufous colour may be. One adult bird which I brought home alive from India last December in beautiful plumage, has much grey marking through the rufous on the head; but probably this year there will be less of the grey. She is in high health and beauty, and has begun to moult.

FALCO SEVERUS.

This beautiful little Falcon (not noticed as yet by Dr. Jerdon in his Supplementary Notes) I find mentioned in my memoranda as bearing apparently the same relation to *F. subbuteo* that *F. peregrinator* does to *F. peregrinus*. It is local, while *F. subbuteo* is migratory; its colouring is deeper, and its feet and beak are stronger than in *F. subbuteo*, in a degree exactly corresponding with the differences as to colours and proportions between the two larger Falcons.

I observed exactly the corresponding differences between *Cuculus himalayanus* and *C. canorus*. It seems very curious that, in addition to their Hawk-like markings, Cuckoos should resemble the Hawks in these respects also. I was reminded of my remarks the other day on looking at a beautiful adult specimen of *F. severus*, now in the hands of Mr. Edwin Ward, which

I shot at Futtehghur in 1866. I found this species breeding in the Himalaya in 1860, and got young birds unable to fly.

ACCIPITER MELANOSCHISTOS.

I find it very difficult to recognize any distinction between this bird and *A. nisus*, the latter being subject in Europe (where, I suppose, *A. melanoschistos* is not admitted to be found) to great variations of size and colour. Native falconers of India do not admit two species of Basha, as *A. nisus* is called by them, though they are much given to distinguishing varieties, and enumerate more Shaheens than we do.

Yours truly,
E. DELMÉ RADCLIFFE,
Lt.-Col. 88th C. R.

St. Helena, 15th Nov. 1870.

SIR—Several attempts have been made at various times to introduce new birds into this island, and I hope that some short account thereof may not prove uninteresting.

The island-records state that on the 18th of November, 1824, English singing birds were introduced: whether they succeeded for a time or not, no further record appears. Some of the inhabitants say that Blackbirds did succeed upon that occasion; if so, their existence here must have been for a short time only. From the same source we learn that, in the year 1852, Thrushes, Blackbirds, Larks, and Starlings, and in 1853 South-American Mocking birds were introduced. None of these proved successful. What were the causes of failure it is now impossible to tell; I believe, however, that non-success arises chiefly from turning the birds loose in cold wet weather when they have been much weakened by confinement during a long sea-voyage—and also that in their weak state they easily become a prey to cats and rats, which abound in the island.

Through the kindness of Mr. E. L. Layard, who sent me the birds from the Cape of Good Hope, three Cape-Pheasants (*Francolinus clamator*) were let loose here in June 1865, and also several Cape-Partridges (*Francolinus afer*) were turned out in the early part of the year 1867. Unfortunately neither of these attempts succeeded, and, I believe, for the following reasons: in the first instance, extremely wet cold weather set in immediately after the birds were liberated, and, continuing through a long period, proved too trying for them to survive it in a strange land; in the second instance, the birds arrived here at the commencement of the Pheasant-shooting season; it was thought advisable to keep them until the season should be over, in order to avoid the chance of their being shot; they suffered through the confinement, and doubtless, when turned loose, were unable, in their weakened state, to cope with the difficulties which a new country must at first present.

In the month of September 1868, Mr. George Moss, of this island, introduced from Europe a cage containing seventeen Larks. These were in good condition when set loose at "Plantation," the governor's residence, and were subsequently seen; but no very recent report of them has been received: this makes it doubtful if they still exist here, although it is possible. The same gentleman also tells me that about twenty years ago he set loose some Pondicherry Quails; but none are now to be found in the island. He also confirms the report recently given to me by bird-catchers, that the true Canary (*Crithagra canaria*) is now to be seen in a wild state here.

A cage of common Indian Grey Quails was sent to the island by Mr. Andrew Anderson, arriving here on the 20th April, 1869. I was absent from the island at the time, but am told on good authority that the birds were in good condition, though somewhat weak in the wing through confinement. They were set loose at "The Briars," but have not since been seen. I fear it is probable that they fell victims to cats and rats.

With a view to introducing here some enemy to the White Ant insects (*Termes tenuis*), which are most destructive to house- and other property situated in Jamestown, I brought with me, on returning to the island from England on the 1st November last year, a cage of English birds containing seven Blackbirds, six Thrushes, twenty-six common London Sparrows, five Green Linnets, and one Starling; during the voyage each bird was in a separate compartment of the cage, excepting the Sparrows and Linnets; and being a fellow-passenger with them I was able to exercise more than ordinary care on their behalf. They were set loose on the same day at "Plantation," a situation about 1500 feet above the sea, clothed with thick vegetation; fine weather fortunately continued, after they were liberated, for some length of time. It is now a little more than a year since; and the introduction promises success. The Blackbirds and Thrushes have kept to the same locality; occasionally one or the other may be seen flying about in the thickets of Oak and Pine trees; and the song of the Thrush, as well as the Blackbird's notes, are to be heard in the neighbourhood, recalling pleasant home-associations. As a proof that these birds are breeding, it may be mentioned that in May last (the autumn here) a Blackbird's nest, containing four eggs, was seen in the woods at Plantation, and at the present time (spring) a Thrush is sitting upon four eggs in the same locality. It is interesting to note that these birds have kept to the wooded part of the island where they were set loose, while the Sparrows, finding it too unsociable a spot, have migrated over three or four miles to that part where vegetation is more scarce, but houses and human beings more abundant. Not a Sparrow is now to be seen near the place where they were let out originally; but at "Ladder Hill," a barren rocky situation on the sea-coast, at an elevation of 600 feet, where soldiers' barracks, stables, &c. exist, they are to be seen in flights of five or six. Also on the outskirts of Jamestown, adjacent to Ladder Hill, they may be seen daily hopping about the roadways just as much at home as if they were in the London streets. There can be no doubt that the Sparrow is now well established in the island, and that in time it will prove a very valuable introduction to a place like this, where insects are so very destructive. It is somewhat remarkable that the Sparrows appear to have selected for their head quarters at present a barren, rocky, unfrequented valley, situated about a mile to the westward of Ladder Hill and Jamestown; from this they visit the latter places during the daytime in search of food and water.

Of the Linnets I am unable to give a report just yet; owing to their similarity in shape and colour to the female bird of the local Canary (*Crithagra butyracea*), at a distance it is difficult to distinguish one from the other; there is good reason, however, for thinking that they are doing well and are associating with the island-Canary. Very recently, I believe that I saw and heard one of them; others have told me that they have heard their note. What is the fate of the solitary Starling, which was let out with the others, I know not; its companion escaped at sea, on the voyage out, could not be recaptured, and most probably perished.

Yours, &c.,
J. C. Melliss.

New York, 13 March, 1871.

Dear Sir,—I cannot agree with you and Mr. Sclater that my *Porzana guatemalensis* and *Porzana concolor* are identical. I will endeavour to point out how they differ. I have two fine specimens of *Porzana castanea* from Brazil, and one of *P. concolor* from Jamaica, which do not appear to differ: therefore I agree with you as to their identity. But all are much larger than the dimensions given in your monograph, the three being very uniform in their measurements, which are as follows:—*P. concolor*. Length 10 in., wing $5\frac{1}{8}$, tail $2\frac{1}{2}$, tarsi $1\frac{5}{8}$; bill from front, following the curve, $1\frac{3}{16}$, from rictus to tip $1\frac{3}{16}$.

Now my *P. guatemalensis* measures:—Length 8 in., wing $4\frac{5}{8}$, tail $2\frac{1}{4}$, tarsi $1\frac{3}{8}$, bill from tip to front and to rictus 1.

The specimens of *P. concolor* are much alike in colour, one from Brazil rather lighter below than the other two; but none are so dark as my species, which is of a cinnamon-brown above, and of a deeper reddish-chestnut below; the wings are of a much brighter colour in *P. concolor*. Although the two have a general resemblance to one another in colour, the larger size, longer and stronger bill of *P. concolor* readily establish the distinction of *P. guatemalensis* as a species.

Yours, &c.,
G. N. Lawrence.

[The dimensions, as given in our monograph, of *P. concolor*, taken from Gosse's type in the British Museum are as follows:—

Length 8·5, wing 4·8, tail 2·6, tarsi 1·7, bill 1·1. Those of three skins in our collection, omitting the total length (of little value when taken from a skin) :—

1. From Bahia wing 5, tail 2·4, bill 1·1, tarsi 1·7.
2. „ „ „ 4·7, „ 2·4, „ 1·1, „ 1·7.
3. „ Guatemala, „ 4·25, „ 2·4, „ 1·1, „ 1·5.

Comparing these measurements with those given above by Mr. Lawrence, we must still doubt the possibility of differentiating the Guatemalan bird from *P. concolor* on the ground of size alone, though two of the Guatemalan birds have shorter wings, and one of them a shorter bill. As regards colour, Mr. Lawrence shows that variability exists in his Brazilian specimens; the same appears in ours from Bahia; so that here again we have no very trustworthy character. Apart from these considerations, we think that from the fact of the same species being found in Jamaica, Honduras, and Brazil there are *à priori* grounds for hesitating to admit the existence of a second nearly allied species in Guatemala of one of this wandering, widely-ranging genus of birds.—Ed.]

Mr. T. T. Cooper's recently published volume of Travels in China* gives an interesting account of his meeting with Bishop Chauveau, the original discoverer of so many rare Phasianidæ at the mission-station of Ta-lin-pin, in the mountains of Western Szechuan. Here Mr. Cooper states that he "secured himself against a scarcity of food" by stocking his larder with "Pheasants of the Lady Amherst species (*Thaumalea amherstiæ*)"†. These birds, we may remark, have been recently sold alive in England for £160 a pair!

The following extract is from a letter addressed to Mr. Sclater by Dr. J. Anderson, F.Z.S., dated India Museum, Calcutta, April 27th, 1871.

"I have got a splendid lot of Persian birds, but have not had time to do more than glance at them. It is interesting to know that some of the Indian species, such as *Coracias indicus*, *Merops*

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* Travels of a Pioneer of Commerce, &c. London: Murray, 1871. 1 vol.

† *Op. cit.* p. 182.

viridis, Alcedo bengalensis and *Halcyon rudis,* extend as far west as Shiraz with little or no variation. A number of the specimens in the collection came from the shores of the Caspian Sea; but the majority were collected on the main road from the Caspian to the Persian Gulf, in longitude 50° to 52° east, and at all elevations from 8000 feet to the level of the sea.

"Capt. St. John, under whom the Museum collector was placed, informs me that 'on the shores of the Caspian the country is covered with dense semitropical jungle, swarming with Tigers, Pigs, and the Asiatic *Cervus* (i. e. *C. maral*); the lofty chain of the Elburz, quite barren on its southern slopes, separates the tableland of Persia from the Caspian. From its watershed to the slopes of the hills bounding the Persian Gulf the country and fauna are identical, long barren valleys, divided by equally barren hills, supporting flocks of Ibex, Mouflon, and Gazelle. Most of the birds are from this central plateau. The hills sloping to the Gulf are moderately clad with forest, principally oak, hawthorn, and wild fruit-trees. In the jungles Lions are not uncommon. Below the hills the fauna is more Indian or, perhaps, Scindian.'"

The additions to the Aviaries of the Zoological Society of London during the past few weeks comprehend specimens of several new or little-known species of birds. Amongst these may be noticed as of special interest:—a new Lory allied to the Ceram Lory, which Mr. Sclater has named *Lorius tibialis*; a very rare Lorikeet (*Trichoglossus mitchelli*), of which only one example was previously known; a pair of the beautiful Goose of the Bolivian and Chilian Andes (*Bernicla melanoptera*); a second pair of the small white Swan of Antarctic America (*Cygnus coscoroba*); a pair of Turtledoves from the atoll of Aldebra, north of Madagascar, which appear to belong to a new species of the group allied to *Turtur picturatus*; and an *Aquila,* from Fow-chow, in China, in the striated plumage hitherto usually referred to the young of *Aquila imperialis,* but which Mr. Howard Saunders has lately attempted to show must belong to a distinct species.

THE IBIS.

THIRD SERIES.

No. IV. OCTOBER 1871.

XXX.—*Notes on some of the Birds of the United States of Columbia.* By Claude W. Wyatt.

[Concluded from p. 335.]

122. Ceryle torquata.

Common about the Lake of Paturia, and on the Magdalena. Seems to occur only in the low country.

123. Ceryle amazonia.

This Kingfisher occurs by the mountain-streams at an elevation of 4000 feet; also in the low country. We shot it by the Rio de Oro, near La Cruz, and on the Lake of Paturia.

124. Ceryle americana.

The smallest of the Alcedinidæ which came under our observation. It frequents mountain-streams in the neighbourhood of Ocaña and Bucaramanga. I am not certain whether we saw it in the low country or not; but while canoeing from Paturia to the Dique, we observed a species very much like it, if not identical. The deep-ferruginous throat only occurs in the male, the throat of the female being very slightly tinged.

125. Galbula rufo-viridis.

Paturia and Catamucho.

*126. Bucco pectoralis.

Inhabits the dense forest of the Magdalena valley between Naranjo and the river. Iris brown.

127. Bucco ruficollis.

A common species at Santa Marta. We only met with it on one occasion, while up the country, at Canuto. Iris straw-colour. The crops of those we shot were found to be full of beetles.

†128. Monasa pallescens.

This rare bird only came under our observation once, in the forest near Paturia.

‡129. Trogon chionurus.

We shot a female of this species in the forest near Paturia, and heard the male calling further in. Iris dark brown.

130. Trogon atricollis.

We obtained a male of this species at Naranjo. Iris dark brown.

131. Trogon caligatus.

A single specimen, a female, was obtained in the same locality as the preceding species. Iris dark brown.

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* [Bucco pectoralis, G. R. Gray.

Mr. Wyatt's skins of this species agree with Panama specimens.—P. L. S. & O. S.]

† [Monasa pallescens, Cass. Proc. Ac. Phil. 1860, p. 134, and 1864, p. 287, t. 4.

We are much pleased to meet with a specimen of this *Monasa*, described by Cassin from examples obtained during the Darien expedition under Lieut. Michler. It is easily distinguishable from its allies by its black throat. The interposition of this species between the closely allied *M. peruana* and our *M. grandior* is certainly very remarkable. See our remarks, P. Z. S. 1868, p. 327. We should observe that Mr. Cassin's plate above referred to is not well coloured, the shoulders and body being much too pale, the whole bird being of a nearly uniform tint, as in the allied species.—P. L. S. & O. S.]

‡ [Trogon chionurus, Scl. & Salv. P. Z. S. 1870, p. 843.

Mr. Wyatt's single skin apparently belongs to this northern representative of *T. viridis*. This species has recently been described by Mr. Lawrence as *T. eximius*. Annals of the Lyceum of Natural History of New York, x. p. 11 (Feb. 1871).—P. L. S. & O. S.]

132. TROGON PERSONATUS.

After leaving Canuto our road lay over a mountain where these birds must be tolerably common. We saw three that day in the oak-forest near the highest point of our road, at an elevation of about 8500 feet, and one in the denser forest lower down. We afterwards met with them occasionally in other parts of the forest until near Cachiri. The skin of these birds is exceedingly delicate; and the feathers come out in handfuls when they are shot, should they fall even a short distance before reaching the ground. The first two we shot were brought down by a charge of No. 8; and when we came to pick them up little but a lump of feathers remained. After this we shot them with the same charge we used for Humming-birds. They are very tame, and generally sit motionless up in the trees (where the cock bird, should his back be turned to you, is very difficult to see), and allow one to ride by within a few yards. I have, however, seen them hawking for insects, and returning to the same perch, like a Flycatcher. From the gullet of one of those we shot we took a lizard. Their range seems to extend from an elevation of about 7000 to 8500 feet. Iris dark brown.

133. PHAROMACRUS AURICEPS.

We met with this magnificent Trogon, perhaps the most gorgeous of all the denizens of the South-American forests, in the same locality as *Rupicola peruviana*. Iris dark brown.

134. NYCTIDROMUS ALBICOLLIS.

The only Goatsucker of which we were able to obtain specimens. It was not uncommon at the Lake of Paturia, keeping company with the innumerable bats which flew up and down over the water just after sunset. When among the mountains, we saw Goatsuckers on two occasions; but whether they were of the same species we could not tell.

135. CHÆTURA FUMOSA, Salv. P. Z. S. 1870, p. 204.

This little Swift we only met with at Naranjo, where the forest had been cleared. Altitude 2500 feet. Another species of the *Cypselidæ*, apparently with a white head or collar, was observed by us in the Cocuta valley.

163. PHAETHORNIS AUGUSTI.

We shot a single specimen of this Humming-bird by the stream at Ocaña; and the bird was seen by us on two other occasions in the same place, hovering over some shrubs with small orange-coloured blossoms. Altitude 3700 feet. The irides of all the Trochilidæ appear to be very dark brown, nearly black.

137. PHAETHORNIS LONGIROSTRIS.

Inhabits the deepest recesses of the forest near Naranjo. Altitude 2500 feet.

138. LAMPORNIS MANGO.

Common at Bucaramanga, in the neighbourhood of a little stream just outside the town.

139. THALURANIA COLUMBICA.

Obtained once at Herradura. Altitude 4000 feet.

140. PANOPLITES FLAVESCENS.

Frequents oak-forests, at an altitude of 7000–8000 feet. Very common where it occurs. We met with it at Portrerras, and between Cachiri and Cocuta Saratá.

141. SPATHURA UNDERWOODI.

We shot a specimen of this beautiful Humming-bird hovering over the white waxy blossoms of a tree (*Laplacea speciosa* ?) at Canuto, the only occasion on which we met with it.

142. LESBIA AMARYLLIS.

This long-tailed species was not uncommon under the paramo, on the Pamplona road, and in a little wood below Vetas. It is a shy bird, and we had considerable difficulty in obtaining a specimen of the male, the tail of which is twice the length of that of the female. We mistook the two sexes, at the time, for two distinct species. The male bird (we did not observe it of the female) makes a peculiar fluttering noise with his wings as he flies, resembling the flutter of a fan when it is opened and shut quickly. Mr. Gould, in his work on the Trochilidæ, seems to ascribe this peculiarity to *Lesbia gracilis* only; but probably it is peculiar to the genus. Altitude about 9000 feet.

143. CYNANTHUS CYANURUS.

Obtained once, hovering over the flowers of *Laplacea speciosa* at Canuto.

144. AGLÆACTIS CUPREIPENNIS.

A common species where it occurs. We met with it on the paramo, above Vetas, and in a little wood below. Altitude 9000–10500 feet. We found one nest in a bush on the paramo, containing one white egg. The nest was composed of some spongy substance, apparently of some fungus, and the outside was covered with lichen.

145. OXYPOGON GUERINI.

We found this Humming-bird in the same locality as the preceding species; but its range downwards was not so far, according to our observation, by 1000 feet. These restless little beings hovered in considerable numbers over the flowering shrubs which grew in a sheltered valley on the side of the paramo. The crest and emerald gorget are worn by the adult male only.

146. RAMPHOMICRON HETEROPOGON.

Frequents the same locality as the two preceding species, and is equally abundant.

147. METALLURA TYRIANTHINA.

Not uncommon among the oaks on the road from Bucaramanga to Pamplona, at an altitude of 9000 feet. We also met with it just below Vetas. We often observed it hovering up and down the trunks of the trees; and it probably finds its food among the lichen. Sometimes I have seen it clinging closely to the trunk, with wings slightly expanded, looking like a large moth.

148. ADELOMYIA INORNATA.

We shot this bird at Alto, hovering over the yellow blossoms of a *Rudgea*, sp. ?.; and afterwards near Portrerras, where the same flower occurred again. Altitude 5000–7000 feet.

149. PETASOPHORA CYANOTIS.

Frequented the same flower as the preceding species at Alto. It was also common at Canuto. Altitude 5000–6000 feet.

150. PETASOPHORA ANAIS.

Occurred in the wood at Herradura, but was not common.

151. LAMPROPYGIA CŒLIGENA.

Alto, and in the forest near Canuto. Altitude 5000–6000 feet.

152. HELIANGELUS CLARISSÆ.

This beautiful purple-throated Humming-bird was not uncommon in a forest near Cocuta Suratá. We also saw it at Portrerras, and under the paramo, on the road from Bucaramanga to Pamplona. Altitude 7000–9500 feet. They were generally observed hovering up and down the trunks of the oaks (*Quercus tolimensis*), and evidently find their food among the lichens which grow there. They seemed to prefer the trees whose trunks were covered with a very dark-coloured lichen.

153. AMAZILIA RIEFFERI.

Only observed once, near San Nicolas. Altitude about 3000 feet.

154. AMAZILIA VIRIDIVENTRIS.

Obtained once. Locality?

155. SAUCEROTTIA WARSZEWIEZI.

Frequented the scarlet blossoms of a large tree at Herradura. Very common.

156. SAUCEROTTIA CYANEIFRONS.

Occurred in the same locality as its congener, *S. warszewiezi*, but was not so plentiful.

157. DAMOPHILA JULIÆ.

We shot a single specimen of this species in a large wood near Aguachica.

158. CHRYSOLAMPIS MOSCHITA.

Occurred near the stream at Ocaña.

159. SAPPHIRONIA CÆRULEOGULARIS.

Cienaga.

160. CHLOROSTILBON HAEBERLINI. Cab. & Hein. Mus. Hein. iii. p. 48.

Canta and Ocaña.

161. Panychlora aliciæ.

Canuto, Pirico, and Ocaña.

·162. Crotophaga ani.

Ocaña.

·163. Crotophaga major.

Lake of Paturia.

·164. Piaya cayana.

This pretty Cuckoo seems to be very generally distributed up to an altitude of about 7000 feet, occurring on the savannas, where there are any trees, by the side of wooded streams, and in the forest. Iris bright crimson.

·165. Diplopterus nævius.

Not uncommon between San Nicolas and Naranjo, where the forest was being cleared. Skulks about among the fallen timber. Iris brown. Altitude about 3000 feet.

·166. Ramphastus citreolæmus.

This Toucan was not uncommon on the outskirts of the forest near San Nicolas; and I believe we saw it on one occasion near Paturia. The inhabitants of the country call it the "pepper-bird," from its feeding on the seeds of a pepper-plant. The colours of the beak are exceedingly beautiful when the bird is first killed, being yellow, pale blue, and emerald green. The sexes may be distinguished by the size of the beak, that of the male being the largest. Iris pale blue; face pale blue. We tried Mr. Waterton's plan for preserving the colours of the beak, but we did not find it succeed*.

·167. Andigena nigrirostris.

A not uncommon species in the forest near Portrerras, but we did not meet with it elsewhere. It generally congregates in numbers of four or five. Face yellow and blue; iris brown. Altitude 7000 feet.

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* Since writing the above I have had the opportunity of examining Mr. Gould's plate of this species in his 'Monograph of the Ramphastidæ,' and I find the coloration of the bill as given by him does not accord with my experience. We obtained three specimens of this bird (male and female), in all of which the base of the bill was of a bright yellow colour, running into sky-blue, so as to form a blended band of emerald-green between the yellow and the blue.

168. Aulacorhamphus albivitta.

Apparently not uncommon in the forest near Alto; and we shot it on one occasion near Portrerras. Altitude 5000-7000 feet. Iris dark brown.

169. Campephilus malherbi.

Naranjo was a famous place for Woodpeckers. During the two days we were there we obtained three species, none of which had we met with before. The forest, just round the village, was being burnt and cleared; but large trees were still left standing here and there, naked and charred, and these were the favourite resort of the "Carpinteros," as the people call Woodpeckers. We did not happen to shoot a female of *C. malherbi*, so cannot say whether, like its congener *C. grayi* of the higher mountain-regions, the male only wears the red crest; but we certainly never saw a Woodpecker while at Naranjo without a red crest. Iris straw-colour.

170. Campephilus grayi.

Only met with at Portrerras. *Male.* Red crest. *Female.* Black crest. Iris orange. Altitude 7000 feet.

171. Dryocopus lineatus.

When seen alive in the forest, this species can hardly be distinguished, unless one is very close, from *Campephilus malherbi*. Iris white. Naranjo.

172. Chloronerpis rubiginosus.

This pretty Woodpecker we obtained at Herradura, and met with it occasionally in various localities between Ocaña and Bucaramanga. In the male the red extends over the eye: the cheek also is red.

*173. Melanerpes pulcher.

Naranjo is probably the limit of this species upwards. We only met with it between that place and the Magdalena. At

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* [Melanerpes pulcher, Scl. P. Z. S. 1870, p. 330.

This Woodpecker has only recently been described by Sclater, from Bogotá skins. Mr. Wyatt's specimens show that the yellow nape, which

Naranjo it was very common; but after leaving the mountains it did not appear to be so plentiful. Iris hazel.

174. **Melanerpes flavigularis.**

This yellow-throated Woodpecker has his home in the temperate regions, and amongst the oaks of the Tierra fria. We first met with it at Portrerras; but it was far more abundant just under the paramo, on the road to Pamplona. The male only wears the red patch at the back of the head. Altitude from 7000 feet up to the region of paramos. Iris grey.

175. **Centurus tricolor.**

We saw this Woodpecker in the Mimosa thicket at Santa Marta. It taps the Cacti. Iris hazel.

176. **Conurus wagleri.**

A common species between Ocaña and Bucaramanga. Occurs in large flocks. Iris yellow.

177. **Conurus æruginosus.**

We shot this Parrot amongst the Cactus thickets near Cienaga.

178. **Brotogerys tovi.**

A common species at Naranjo.

179. **Pionus chalcopterus.**

Canta. Iris brown.

*180. **Caica pyrilia.**

Not uncommon on the outskirts of the forest, in the neigh-

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is not perceptible in the typical specimen of the male, is likewise present in this species, as in the allied form, *M. chrysauchen* of Veragua.

The males of these two Woodpeckers are therefore mainly distinguishable by the black and white bands extending nearly up to the throat in the present species, and the front being pure white instead of golden yellow. But the females are more different *inter se*, that sex of the present bird showing a large red patch on the nape, which is replaced by yellow in *M. chrysauchen.*—P.L.S. & O.S.]

* [Caica pyrilia (Bp.).

Psittacula pyrilia, Bp. C. R. xxxvii. p. 807 (1853).

Pionias pyrilia, Finsch, Papag. ii. p. 419.

This beautiful Parrot, which has been indifferently figured by Souancé (Per. t. xxvi.) was originally described from specimens obtained by Fontanier at Rio Acha, above Santa Marta. Mr. Wyatt and his collector secured four specimens of it, which are the first we have ever met with. —P.L.S. & O.S.]

bourhood of Canta and San Nicolas. We also shot it by the Lake of Paturia. It congregates generally in numbers of five or six. Face white; iris dark brown.

181. Psittacula cyanoptera.

We shot this little bird amongst the Cactus thickets near Cienaga. The male only has the blue patches on the wings and rump.

182. Sarcoramphus gryphus (Linn.).

We saw the Condor as we were crossing the paramo of Pamplona, above Vetas. Altitude 11,500 feet. The inhabitants of the country call it "Buitre."

183. Cathartes aura (Linn.).

184. Cathartes atratus (Bartr.).

This scavenger, and its congener *C. aura*, are too well known to need any remarks here.

185. Milvago chimachima (Vieill.).

Generally distributed in the low country and in the Tierra templada. Iris brown.

186. Elanoides furcatus (Vieill.).

This magnificent bird we first met with near Cachiri, sweeping round in extensive circles over a valley some 2000 feet in depth. Altitude 8000 feet. We afterwards saw it near Portrerras and Naranjo.

187. Tinnunculus sparverius (Linn.).

This little Kestrel seems to be very generally distributed. It was always to be seen in the neighbourhood of Ocaña, and wherever the country was open enough for its habits. It was one of the few birds we observed on the paramo. Its food seems to consist chiefly of lizards. Iris very dark brown.

188. Asturina magnirostris (Gm.).

Not a common species. We shot a single specimen near La Cruz. Iris bright yellow.

189. Buteogallus æquinoctialis (Gm.).

190. Urubitinga meridionalis (Lath.).

Of this and the preceding species we shot single specimens on a savanna near Aguachica. From the birds occurring at the same time in the same place, and proving to be of different sexes, we took them for one species. We did not meet with either of them again.

191. Zenaida ruficauda (Bp.).

A common species in the neighbourhood of Ocaña.

192. Chamæpelia passerina (Linn.).

Santa Marta.

193. Chamæpelia amazilia (Bp.).

Ocaña; Herradura.

194. Chamæpelia rufipennis, G. R. Gray.

Common near Ocaña and Bucaramanga; also occurs in the valley of the Magdalena. The general coloration of the male is deep chocolate; the female brown.

195. Leptotila verreauxi, Bp.

Ocaña. Iris straw-colour.

196. Vanellus cayennensis (Gm.).

We met with this bird on one occasion amongst the mountains, by the stream on the savanna of La Cruz. Altitude 4000 feet. At Lake Paturia it was common. Iris purple, almost lilac.

197. Himantopus nigricollis (Vieill.).

We met with this Stilt wading about amongst the shallows of a lagoon near Cienaga.

198. Gambetta melanoleuca (Gm.).

This species came under our observation once, near La Cruz.

199. Tringoides macularius (Linn.).

By a stream, Ocaña.

200. Porphyrio martinica (Linn.).

Lake Paturia.

201. Parra hypomelæna, G. R. Gray.

Occurred in small flocks, generally five or six in number, amongst the water-plants in the Lake of Paturia; occasionally, however, we met with single birds. We also observed it in the delta of the Magdalena.

202. Heliornis fulica (Bodd.).

We shot this bird near Ocaña; it was sitting in a bush by the stream.

203. Ibis infuscata (Licht.).

Lake of Paturia.

204. Ardea cocoi, Linn.
205. Ardea egretta, Gm.
206. Ardea candidissima, Gm.

Lake of Paturia.

207. Ardea cærulea, Linn.

Lake of Paturia, and Cienaga.

208. Butoides cyanurus (Vieill.).

Lake of Paturia, and by a stream on the savanna of Bucaramanga.

209. Tigrisoma brasiliense (Linn.).

This fine Bittern was common at Paturia.

210. Rhyncops nigra, Linn.

Whilst waiting at the Dique, on the banks of the Magdalena, we had several opportunities of watching this curious bird fly along over the shallows by the sand-banks, and plough the water and mud with its scissors-shaped bill. It does not seem to occur on the lower parts of the Magdalena; at all events, it never came under our observation. Iris dark brown.

XXXI.—*A List of the Birds of Southern Spain.*

By Howard Saunders, F.Z.S.

[Concluded from page 225.]

203. Otis tarda. "Abutarda."

Generally distributed over the great plains throughout the country. This species is especially abundant around Seville, residing throughout the year in the "marisma," and coming to the cultivated land in breeding-time. The peasants call the old males "Barbones" and "Moriscos," asserting that they come over in spring from Morocco; but the word is merely a contraction of "Mariscosos," from the flavour of "marisca," or salt-marsh, which their flesh has at that time. Mr. F. T. Drake's observations in the 'The Ibis' (1869, p. 154) show that this species is almost unknown in Morocco, where its place is taken by *Otis arabs*.

204. OTIS TETRIX. "Sison."

Abundant in the higher and broken ground, but rarely found in the level plains frequented by the preceding species. To this Lord Lilford adds, "Your remarks exactly agree with my own observation. On the *flat* corn-lands they are hardly ever to be seen; but where the ground undulates, *however slightly*, there they are—*e.g.* atAlgaba, in May 1869." This species is a very late breeder, depositing its eggs in the wheat-fields in June.

205. OTIS HOUBARA.

I have examined two specimens killed in Andalucia. The species seems to be probably overlooked by the natives, and consequently cooked as a sort of "Sison," the flesh of which is esteemed, whereas that of the Great Bustard is considered "muy basta" or coarse. When riding up from the great plains on 4th May, 1868, under a deluge of rain, we saw a pair of Bustards, which Manuel said were "Sisones;" but though it struck me at the time that these appeared larger than *Otis tetrix*, and were in ground not usually frequented by that species, yet, with a swollen flood behind us, and another river in front, whose fordability was more than doubtful, we could not stop even for the chance of a Houbara.

206. GLAREOLA PRATINCOLA. "Canastera."

Abundant in the "marisma," where it deposits its eggs, never at any great distance from water, but invariably on dry ground. The eggs never exceed three in number, being often but two, which are laid with their axes parallel. On the wing, this bird has many of the characteristics of the Terns, but on the ground its motions are Plover-like; and the young run imnediately on emerging from the shell.

207. Œdicnemus crepitans. "Alcaravan."

Common and resident, frequenting dry watercourses, and the most arid plains, where it deposits its eggs.

208. Vanellus cristatus. "Ave fria," "Judia."

Very numerous in winter, but generally considered to leave the country in spring. I was therefore surprised to find it breeding in great numbers in the "marisma," and, until I had shot several individuals, I cherished a wild hope that it might prove to be the next species,

209. Chetusia gregaria.

Of this Plover one half-putrid example hanging up in the market of Cadiz, in February 1868, was the only one I ever saw in Spain.

210. Squatarola helvetica. "Chorlito."

Not uncommon on the passage. The finest black-breasted ones in my collection were obtained in Malaga in May; but during the winter I found very few specimens in the market, and the majority evidently proceed further south.

211. Charadrius pluvialis. "Chorlito."

Considerable flocks of Golden Plovers are found throughout winter and early spring, when they return to their more northern breeding-grounds.

212. Eudromas morinellus. "Chorlito marismeño."

A regular visitor on migration, but by no means abundant at any time.

213. Ægialitis hiaticula. "Correplaya," "Anda-rio."

Common in winter, but does not remain to breed.

214. Ægialitis cantianus. "Frailecillo."

Is abundant in the plains, and breeds there.

215. Ægialitis minor. "Frailecillo."

Breeds in the plains, notably near Aranjuez, its tastes being for still dryer and more sandy ground than that chosen by the preceding species.

216. STREPSILAS INTERPRES. "Vuelve-piedras."

This name is not commonly used, but is also applied to the next species.

This bird is a regular visitant.

217. HÆMATOPUS OSTRALEGUS.

Not uncommon on the coast in winter.

218. RECURVIROSTRA AVOCETTA. "Boceta."

Breeds in the marshy plains, whence I have the eggs; but it does not appear to be numerous, and only three or four pairs have come under my own observation.

219. HIMANTOPUS MELANOPTERUS. "Ziguinuela;" "Camas de jonc," in Majorca.

Common in the marshy plains, where it breeds; but being a very local bird, it is considered quite a rarity in other parts of Andalucia. The nest being situated in a tussock of grass close to, and almost in, the water, the eggs, the complement of which is four, are almost invariably covered with mud, whilst those of the Redshank, which breeds but a few yards off, are always clean.

220. TOTANUS GLOTTIS.

Generally distributed, remaining till quite the middle of May.

221. TOTANUS FUSCUS.

A regular but not a numerous winter-visitant. I procured a fine female in March at Málaga.

222. TOTANUS CALIDRIS.

Abundant in the marshy plains, where it breeds, as stated above, with *H. melanopterus*, *Glareola pratincola*, *Ægialitis cantianus*, and *Vanellus cristatus*, of all of which I have taken eggs within a radius of 300 yards.

223. TOTANUS OCHROPUS.

Obtained at Seville in January.

224. TOTANUS GLAREOLA.

I shot this bird in the "marisma" on 29th April; and again on May 28th I shot a female, which was evidently incubating, at the Mar de la Antigola, near Aranjuez.

Totanus stagnatilis has not been obtained within my limits; but I may mention that there is a specimen in the Barcelona museum, and it doubtless occurs in other parts of Spain.

225. ACTITIS HYPOLEUCA.

Obtained in winter at Málaga.

226. LIMOSA ÆGOCEPHALA.

Not uncommon in winter, and abundant in March, on passage.

227. LIMOSA RUFA.

Of rare occurrence in western Spain, but far more common to the east. I saw an individual in the Málaga market in November.

228. MACHETES PUGNAX. "Combatiente," a name by no means generally known.

Common in autumn, and somewhat less so in spring, when I obtained many males with half-developed ruffs.

229. TRINGA CANUTUS.

Occurs in autumn and spring. I have seen it in tolerably rufous plumage in May.

230. PELIDNA SUBARQUATA.

Obtained in May, in the fullest breeding-plumage, on its way north.

231. PELIDNA MARITIMA, } Both these species are very numerous in winter.
232. PELIDNA CINCLUS. }

233. ACTODROMAS MINUTA, }
234. ACTODROMAS TEMMINCKI. }

I have examined specimens of both these species in winter; but being considered too small for eating, they are rarely brought into the markets. Indeed, throughout Spain, *small* birds are at a discount.

235. CALIDRIS ARENARIA.

Abundant in autumn and part of winter; but early in spring I lost sight of them, and failed to obtain specimens in any approach to breeding-plumage.

All the foregoing Waders are generally "lumped" under the names of "Correplayas," "Andarios," and, on the south-east coast, "Picaruas."

236. SCOLOPAX RUSTICOLA. Andal. "Gallineta"; Cast. "Chocha."

Abundant during the winter in many parts of Spain.

237. TELMATIAS GALLINAGO, } "Agachadiza," "Agachadera."
238. TELMATIAS GALLINULA, }

Abundant in winter, especially the former.

239. TELMATIAS MAJOR.

Is found but rarely, and I never obtained a specimen in the flesh.

240. NUMENIUS ARCUATA. "Zarapito real."

Common in winter, and, not being esteemed for the table, is little persecuted, and consequently not so shy as with us.

241. NUMENIUS PHÆOPUS. "Zarapito."

Common in winter.

242. NUMENIUS TENUIROSTRIS. "Zarapito."

Not common from March onwards. It is said to breed in Majorca. Near Gallocanta, in Aragon, I saw a pair on 29th May, which certainly ought to have had a nest; but I could not find it: nor would they let me get within range; so I was obliged to study them through my binocular.

243. GRUS CINEREA. "Grulla."

Abundant in the "dehesas" and marshy plains from autumn to spring, when the majority take their departure, although a considerable number remain to breed. I found it nesting, and have eggs from the marshes of Doñana, and am informed that in some places it nests almost in colonies. It is partial to acorns; and in the Dehesa de Remonte it interfered so much with the fattening of the pigs which are driven in to feed, that war was declared against the species by the proprietor.

244. ANTHROPOIDES VIRGO. "Grulla moruna."

Though less abundant than the preceding, it is by no means rare in winter; but it takes its departure early in April, and, so far as I am aware, has never been known to breed in any part of Andalucia, beyond which province it is almost unknown.

I am not aware of the existence of a single authentic specimen of *Balearica pavonina* either on the mainland or in the Balearic Islands. Indeed, the only notice of its ever having occurred in the latter is contained in the list of my friend Don Francisco Barceló y Combis, who, however, assured me personally that no specimen had been obtained within his recollection. The evidence upon which this species has been christened "*balearica*" is as follows:—Don Buenaventura Serra, who died in 1784, states, in his work on the Natural History of the Balearic Islands, that *he has heard it said* that, in 1780, a specimen was obtained at Santa Ponsa, which passed into the hands of Don Cristobal Villela. Hardly sufficient for a British jury, yet "confirmation strong" when compared with the evidence on which such species as *Circus pallidus*, *Telephonus tschagra*, and *Ixos obscurus* have been made "plentiful in Andalucia."

245. ARDEA CINEREA. "Garza real."

Abundant in suitable localities, especially in the marshes near Seville, where it breeds.

246. ARDEA PURPUREA. "Garza moruna;" in Valencia, "Agró."

This species is also abundant, breeding a few miles from Seville. It was the only Heron we saw at the Albufera of Valencia, where we found upwards of a dozen nests in a reed-bed on 29th May, some with young birds, and others with eggs in various stages of incubation. The nests were most flimsy structures, being little more than reeds bent down and arranged crosswise, with a few separate pieces added. The complement of eggs in no case exceeded three. The following is a description of the nestling made on the spot:—Skin and feet yellowish green, yellow on abdomen; upper mandible greenish horn-colour, lower mandible yellow; iris pale straw-yellow; feathers reddish brown; hairy crest; shafts of feathers lead-blue; all edged with white down, whitest on abdomen; claws horn-white. Cry for food, "kick, kick, kick," harsher when irritated.

247. Egretta alba.

Rare. I saw one individual in the Coto de Doñana on 2nd May, but I have no knowledge of its breeding-place. It visits the east coast with more frequency than Andalucia.

248. Egretta garzetta. "Garza blanca."

This species, which occurs in suitable localities throughout Spain, is abundant in the Cotos of Doñana, where it doubtless breeds; but I have never been able to obtain its eggs, owing to the unexampled drought which has prevailed for three successive springs, viz. 1868, 1869, 1870. In wet seasons, such as that of 1866, almost all the European Herons, with Spoonbills and Glossy Ibis, might, I believe, be found breeding in the wooded swamps, where, in May 1868, I saw hundreds of old nests; but not one single egg could I find, nor have my collectors been more fortunate either later in the season or in the two following years, though the birds were always numerous.

249. Buphus bubulcus. "Purga-bueyes," a corruption of "Espulga-bueyes."

Thousands may be seen in the "marisma," but, scattered as they generally are amongst the herds of almost wild cattle, it is not always easy to obtain a clear shot. My remarks about the breeding of the preceding will apply to this and to the following species, with the addition that in the "Fonda de Europa" at Seville, there are, or were, two which were taken from the nest in 1867. They used to stalk about the "patio," delighting the visitors by their adroitness in catching flies, and at night they retired to roost in the orange-trees.

250. Buphus ralloides. "Cangrejera."

Though numerous, it is less abundant in the "marisma" than the two preceding species; it is also much later in assuming its breeding-plumage, many of the specimens which I obtained at the end of May having the neck still partially bare.

251. Ardeola minuta. "Cangrejerita;" in Valencian, "Gomet."

Tolerably abundant in marshy places, where it breeds; it is quite common on the Albufera.

252. Botaurus stellaris. "Cangrejera;" "Avetoro;" also, from its Owl-like flight and crepuscular habits, "Garza-mochuelo."

Tolerably abundant in the "marisma," where I saw it, and where Lord Lilford afterwards obtained its eggs. At el Prat, near Palma, I flushed one, which was evidently "dreaming the hours away," from a small pine-tree; it flapped lazily away to another tree; and by cautiously following it up, I was enabled to identify the species without the necessity of shooting a bird which I did not want.

253. Nycticorax griseus. "Martinete."

Very abundant in the marshes of the Cotos, where it breeds in colonies on small trees. In a clump of bushes rather than trees, near the Palace of the Coto del Rey, I saw dozens of old nests, at an elevation of from five to fifteen feet from the ground, the construction being but a trifle more substantial than that of a Ringdove, though somewhat larger.

254. Ciconia alba. "Cigueña."

Abundant throughout the country, breeding in the towers and belfries of the churches of the towns and cities, and on the "almihares" or stacks of the farm-houses. The largest number of eggs that I have known is five. On the strength of its behaviour on the occasion of a certain fire at Delft, this bird has acquired a reputation for unusual devotion to its offspring; but whatever may be the merits of the Stork as a *mother,* she is well known as a thoroughly unfaithful wife; indeed she is the type of cunning conjugal infidelity, and her devices to hoodwink her husband, which I have myself witnessed, are so curious that it is a pity they will not bear description. To call a woman of the lower classes "Cigueña" is the most grievous insult possible. On the 15th May, returning from the Isla menor, we passed an enormous herd, numbering, not hundreds, but thousands, the main body whitening acres of ground, and feeding with their heads down, just like flocks of sheep. Even after passing the outsiders, which of course raised their heads, I vacillated for a moment as to whether the huge white mass was not sheep after all; but a shot at a Kite which crossed at that moment, put the matter beyond doubt. They were feeding on the grasshoppers with which the plain was alive; and some score of Black Kites were enjoying the same food on the skirts of the flock. Nine-tenths of these birds could not possibly have been breeding, at least not in all Andalucia, yet I observed no signs of immaturity in their plumage. There is also a superstition amongst the lower classes, that a Stork's egg, given to an habitual drunkard (a rare thing in Spain), will reform him; and to this I owe a pair now in my collection, though I beg to say the eggs were not taken for my especial benefit. Manuel was accosted one morning by an old woman, who, with tears, implored him to get her a Stork's egg for her son, who was accustomed to get drunk and disorderly, offering him the enormous price of Rs.10, or *2s.* of our money. Manuel proceeded to visit an accessible nest he knew of; but it only contained one egg; so, judging that there might be another dipsomaniac in Seville to whom an egg would be beneficial, he decided to wait a day or two for a second, orders at two shillings a piece being uncommon. But on his repairing to the old lady, she screamed out, "Oh! why did you not come yesterday, for last night my son got drunk and quarrelsome and stabbed a man, and they've taken him to prison. Ay de mi!" So eventually the Stork's egg passed into my possession; but I did not think it necessary to swallow the contents. During the breeding-season, these birds keep up a constant chattering with their bills, a noise which, when heard proceeding from a flock on the wing, is sometimes very puzzling to a stranger.

255. CICONIA NIGRA. "Cigueña nigra."

I did not meet with this species in Andalucia; but specimens are in several museums. Near the Montes de Toledo I knew of two nests this year, both in holes of rocks, and saw the birds belonging to one of them, which it would have taken more time and trouble to rob than the contents were worth.

256. CICONIA ABDIMI.

I insert this bird, new to the European list, on the authority of Don Victor Lopez Seoane, who mentions its capture near Granada on the 18th June, 1858. In this I depart from my custom, as I have not seen the specimen in question; but Señor Seoane gives such an accurate description and measurements, that it is impossible to doubt the authenticity of its occurrence. An interesting account of the breeding of this Stork is to be found in 'The Ibis,' 1868, p. 257.

257. Ibis falcinellus. "Morito," "Garza diablo."

Abundant in the "marisma," where it undoubtedly breeds.

258. Platalea leucorodia. "Espatula," "Cuchareta," "Paleto."

Breeds in the wooded "pajareras," but is not very numerous.

259. Phœnicopterus roseus. "Flamenco."

My principal aim during the past season has been the discovery of the breeding-places of this bird; but, owing to the drought, all the efforts of my cazadores have been unavailing; and I do not think any have nested within thirty miles of Seville for several years. Failing personal observation, I translate part of a letter from Manuel, in reply to a severe cross-examination, the composition of which must have caused the notary no small amusement; for my worthy friend is unacquainted with the arts of reading and writing, though quick enough at his arithmetic:—

"The Flamingo always makes its next in the flattest part of the marsh, in places where there is from three to four inches of water. The nest, which rises to about half a yard above the surface of the water, is made of mud, like that of a Swallow; its shape is almost cylindrical, but somewhat wider at the base. There is a slight concavity for the eggs, oval in shape, like the shape of the inside of a hat.

"When the bird is sitting, she has her legs stretched out behind, hanging in the air (that is to say, unsupported), like the arms of a man when he puts them behind his back, and throws his shoulders forward. The complement of eggs is five; and the birds, when once frightened from their nests, do not return. To raise itself, the bird 'scrambles' with its feet on the side of the nest till it lifts its body clear, and then it takes wing."

This account tallies with the oral information I have already collected, and of which I gave a résumé on exhibiting some of the eggs at a meeting of the Zoological Society; but a well-known ornithologist pooh-poohed the idea of such a position, preferring the notion of the bird's sitting with its legs doubled underneath it—because, forsooth, to his mind, the latter position would be more comfortable. Eggs taken in 1865, which I obtained through the kindness of some Spanish friends, are larger than, but otherwise similar to, those of a Gannet (but on scraping away the chalky surface, the shell is greenish), and in shape more pointed at one end.

An excellent observer at Málaga assured me that, amongst the many Flamingos he had seen from the salt lake of Fuente-piedra, much frequented by those birds, but where they do not breed, he had occasionally observed a small one, *red all over*; and on sending me the skin of a very rosy one, he observed, "This bird is smallish and very rosy, but it is not the small species of which I spoke to you, that being *far more* orange-red (rojo anaranjado), whereas this is pink." I therefore fully expect to be able to exhibit some day a skin of *P. erythræus*, the statement respecting this smaller ruddy Flamingo having been fully confirmed on my visits to the lake in question by a native hunter of its vicinity.

Last year (1870) I again visited Spain, with the express object of trying some other localities where it was possible this bird might breed, having given instructions to my correspondents in the south to telegraph the moment they found a nest in their part of the country. I visited the unwholesome delta of the Ebro, nothing there; then to Majorca, nothing there either; but on my return I was assured that this bird sometimes nested in the island of Iviza. I sent a man down to some of the lakes in La Mancha with no better result, whilst I myself set out to explore the lake of Gallocanta in Aragon, a very awkward place to get at. Arrived there, I could find no signs of a Flamingo, and all the herdsmen and inhabitants of that dreary basin agreed that the "Gorrones," as they called them, though abundant in winter, never *had* nested there. I could put my finger on half a dozen places in the south where they really *have* nested; but until we have had several "años de agua," I fear all further search is useless. This year, too (1871), I have no news.

260. Cygnus olor. "Cisne."

The only instance in which I can identify this species is in the museum of Valencia.

261. Cygnus musicus

is in the museum of Palma de Majorca. Wild Swans are obtained in severe winters in the "marisma;" but I cannot say to which species they belong.

262. Anser cinereus, } "Ganso bravo;" Valencian, "Oca."
263. Anser segetum. }

Both these species are found during the winter; and I have seen them in the markets.

264. Bernicla leucopsis.

I saw one specimen at Seville, shot in the "marisma."

265. Tadorna rutila. "Pato-tarro."

Several specimens in the museums of Jerez and Seville, and one in my own collection. I was assured that it bred near San Lucar.

266. Tadorna vulpanser. "Pato-tarro."

This is also found, in much greater abundance than the last, so that the eggs shown to me may belong to either species.

267. Rhynchaspis clypeata. "Pato cuchareta."

Not uncommon in the "marisma," where, I think, it breeds.

268. Anas querquedula.

Occurs in winter.

269. Anas marmorata. "Pato jaspeado."

Abundant in the "marisma" throughout the year, and breeds at Santa Olaya.

270. Anas strepera.

Abundant in winter and up to April. Breeds at Santa Olaya.

271. Anas crecca. "Patito," "Cerceta."

Common in winter.

272. Anas boschas. "Pato real;" Valencian, "Colvert."
Universally distributed, and very abundant, breeding in the "marisma" and Cotos.

273. Dafila acuta.
A winter visitant, and not uncommon.

274. Mareca penelope. "Pato-silbador."
Abundant in winter and early spring.

275. Erismatura mersa. "Malvasia," "Pato-tarro."
Resident, and common in the lower "marisma," near San Lucar, where it breeds, but rare in the vicinity of Seville.

276. Fuligula rufina. Valencian, "Sivert."
I never obtained this bird in the flesh in Andalucia, and am inclined to consider it rare. In the Albufera of Valencia I found it very abundant in 1863; and though now sadly reduced in numbers, it was the only species of Duck I found there last May.

277. Fuligula ferina. "Cabezon."
Tolerably abundant; but I cannot say whether it remains to breed in Andalucia, though it certainly used to nest at the Albufera in past years.

278. Fuligua nyroca. "Pardote."
Breeds in the lower marshes of the Guadalquivir, especially near Medina-Sidonia.

279. Fuligula cristata.
I shot one out of a flock of eight at the mouth of the Guadalhorce, near Málaga.

280. Glaucion clangula.
I observed this species in the market of Málaga in January 1868.

281. Œdemia nigra.
One specimen observed in the market of Málaga about the same time as the last.

282. Mergus albellus,
283. Mergus merganser,
284. Mergus serrator.

All three species occur in winter, especially at the Albufera.

285. Pelecanus crispus.

Specimens have been obtained at Valencia and in the Balearic Islands; and if my memory does not deceive me, there are examples in the museums of Málaga and Jerez. Of course, its occurrence so far west is rare.

286. Phalacrocorax carbo. "Cuervo marino."

Generally distributed along the coast and rivers in winter.

287. Phalacrocorax graculus.

This was the only species of Cormorant which I found breeding at the island of Dragonera, where I shot an adult for identification. The water was alive with young birds, which are, I believe, the *P. desmaresti* of Payraudeau.

288. Sula bassana.

I observed great numbers of this species fishing off Cape Trafalgar in December.

289. Sterna caspia.

Occasionally obtained at the mouth of the Guadalquivir, but is more abundant on the east coast, according to Guirao.

290. Sterna anglica.

Abundant in the "marisma," breeding at the mouth of the Guadalquivir, and many other places.

291. Sterna cantiaca.

Tolerably abundant along the coast, breeding at the mouth of the Ebro, also on the shores of the Mar Menor, near Cartagena.

292. Sterna affinis.

Of this Tern I have recently obtained a specimen shot off Gibraltar.

293. Sterna fluviatilis.

Abundant on some parts of the coast, especially on the Mar Menor, where it breeds, probably its southern breeding-limit; for I did not find any of its eggs amongst a collection sent up from a locality near San Lucar apparently well suited to its habits, nor did I observe it off Huelva at the end of May.

294. STERNULA MINUTA.

Tolerably abundant. I believe Lord Lilford obtained its eggs. I found them at the mouth of the Ebro.

295. HYDROCHELIDON HYBRIDA.

Abundant in the "marisma," where it breeds. To judge from the contents of the stomachs of those I examined, their principal food consists of water-beetles; but they are very fond of flies and mosquitoes, and may be seen hawking after them, like Swallows, by the hour together.

296. HYDROCHELIDON LEUCOPTERA.

Only observed once in the "marisma;" but eastwards it becomes more abundant in spring, though I do not think it breeds in any part of the peninsula. At the Albufera of Valencia it was abundant in May; and I also obtained it near Palma.

297. HYDROCHELIDON FISSIPES. Valencian, "Fumarel."

This species is tolerably abundant in the "marisma," where it breeds; but over the rice-swamps of the eastern coast it swarms.

Terns in general are known as "Golondrinas de Mar," the larger species (and some of the smaller Gulls) being called "Gavinas," ordinary Gulls "Gaviotas," and a very large one is called "Alcatraz."

298. CHROICOCEPHALUS RIDIBUNDUS.

Common in winter, especially in the harbours. Vidal says that it bred in his time at the Albufera; but on my last visit I could find no trace of it.

299. CHROICOCEPHALUS MELANOCEPHALUS.

Less abundant than the preceding species in winter, it becomes more noticeable in March, when it assumes the full black head. It breeds in the marshes near Cadiz and Huelva, where I found it at the end of May, and have authentic eggs from the former locality.

300. CHROICOCEPHALUS MINUTUS.

Not uncommon off Málaga in winter and spring; but its stay is usually short.

301. Rissa tridactyla.

Abundant outside the Straits of Gibraltar in winter, but becomes rarer to the eastward.

302. Larus gelastes.

By no means uncommon on the coast; and I strongly suspect that it breeds at the mouth of the Guadalquivir, near San Lucar de Barrameda.

303. Larus canus.

A winter visitant, and by no means a numerous one.

304. Larus audouini.

This Gull was obtained by Natterer near Tarifa, and has also occurred in the Balearic Islands, where, however, I had not the good fortune to see it. It is said to breed in the island of Sardinia, which is not far off and presents similar natural features.

305. Larus argentatus.

Abundant in winter on the coast, especially outside the Straits of Gibraltar; within these straits it gives place to its congener,

306. Larus leucophæus (Licht.).

This species, or race, is smaller than *L. argentatus*, and has distinctly yellow legs and feet, like those of adult *L. fuscus*. I found great numbers breeding at the Dragonera.

307. Larus fuscus.

Abundant in winter and early spring; but I saw no signs of its breeding on any part of the coast or islands.

308. Larus marinus.

Not uncommon in immature plumage; but adults are rare.

309. Lestris catarractes.

Observed outside the Straits of Gibraltar.

310. Lestris parasitica.

A winter visitant; but almost all the specimens I have seen of this and the following species have been in immature plumage.

311. LESTRIS POMARINUS.

According to my experience at Málaga, this is the most abundant of the three species in winter. All the family is well known to the fishermen as "Cágalo," a name equivalent to that applied in northern Europe.

312. THALASSIDROMA PELAGICA.

What I am inclined to consider a variety of this species breeds in abundance at the Hormigas, Isla Grosa, and other islands outside the Mar Menor. Don Angel Guirao states that "they differ from the type, inasmuch as neither the young nor adults ever have the scapulars and secondaries tipped with white." My own note, made after handling his specimens in 1867, merely states "no white bar on wings;" but my *impression* is, that the white on the rump is less distinct than in more northern examples; still I was in such bad health at that time, that I did not give them the attention I should otherwise have done.

313. PUFFINUS CINEREUS (Boie). Majorca, "Guay-guay."

314. PUFFINUS ANGLORUM. Majorca, "Baltridja," "Virot."

Both species are abundant in the Mediterranean; but the latter, being far more nocturnal in its habits, appears to be the rarer of the two. But pass a night at sea in a fishing-boat, and as the sun goes down, and the last rosy tint fades from the mountains, the air suddenly becomes alive with dark sharp-winged Manx Shearwaters, dashing hither and thither in the gloom, and justifying the names the Málaga fishermen give them of "Animas" and "Diablos." The larger species may be seen in great numbers in the daytime; and both breed at the island of Dragonera. To my great surprise, I found that I was too late for eggs on the 20th May, and a nestling obtained by a fisherman was considered a very backward bird. Still several were in their holes at the Dragonera; for we could hear their "crooning," changed to a harsher note on our endeavouring to hook them out with a rude gaff; but in this we were unsuccessful, and, being short of water, had to leave the island but half explored.

315. **Uria troile.**

Of rare occurrence in the Mediterranean in winter. I have only seen three specimens obtained there. Near Gibraltar it is probably more numerous.

316. **Alca torda.**

Even rarer than the preceding species, and I can only remember having seen one specimen.

317. **Fratercula arctica.** Majorca "Cagafet."

Though never very numerous to the east of the Straits, it is far more abundant than either of the preceding, and is well known to the fishermen of the Dragonera, where, however, it does not breed. A friend has informed me that he once saw many hundreds off the coast of Morocco, near Mogador; but the most southern breeding-place with which I am acquainted is at the Berlengas, or Farallones, a group of rocks in the Atlantic, a trifle to the north of the latitude of Lisbon.

318. **Colymbus septentrionalis.**

A regular autumn and winter visitor. I saw many between Gibraltar and Cadiz.

319. **Podiceps cristatus.**

Undoubtedly breeds in the marshes of Andalucia, but, from its retiring habits, is rarely obtained. Its principal haunt is the Albufera of Valencia.

320. **Podiceps nigricollis,** } Val. "Cabusot;" And.
321. **Podiceps minor.** } "Zambullidor."

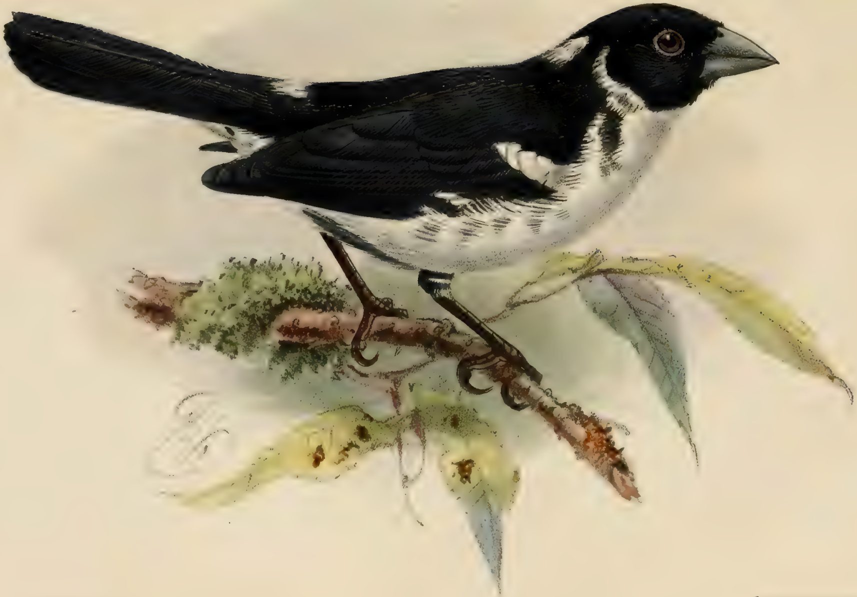
Abundant in suitable localities throughout the country; and any reedy pond is tolerably certain to contain a nest or two in the season.

XXXII.—*Description of a new Genus and Species of Bird belonging to the Family* Fringillidæ. By D. G. Elliot, F.L.S., F.Z.S., &c.

(Plate XI.)

Dolospingus nuchalis, gen. et sp. nov.

Dolospingus, *genus novum* Fringillinarum; *rostrum compressum,*



J. G. Keulemans lith.

M & N Hanhart imp.

DOLOSPINGUS NUCHALIS.

magnum, subdescendens, gonys ascendens: remiges tertius et quartus fere æquales et longissimi.

D. nuchalis ♂. *Capite, gula, dorso et alis nigris: primariis brunneo-nigris: macula magna nuchali, fascia alari et urypygio albis; cauda nigro-brunnea: subtus albus; rostro corneo, mandibula ad basin nigricante; pedibus nigris.*

Head, throat, and entire upper parts black, with slight bluish reflections upon the back; a conspicuous white spot in the centre of the neck behind; primaries brownish black, smaller coverts tipped with white forming an alar bar; rump white; upper tail-coverts black; tail blackish brown, the feathers rather pointed; entire underparts and flanks white; bill very thick at the base, converging to a sharp point, horn-colour; the base of mandible and sides of maxilla blackish; feet and tarsi black.

Total length 5 inches; wing 2$\frac{5}{8}$ in.; tail 2$\frac{1}{2}$ in.; tarsus $\frac{5}{8}$ in.

Hab. Orinoco, on the borders of British Guiana.

The singular Finch here described was received by Madame Verdey, of Paris, in a small collection obtained on the Orinoco river, on the borders of British Guiana. In its general coloration and in the markings of its plumage it is not unlike the members of the genus *Spermophila*, and, were it not for its extraordinary bill, would seem to find its place most naturally in that genus. But the bill precludes such a disposition of this species; and indeed there is no genus known to me under which it may be classified; I have therefore proposed the term *Dolospingus* for this curious form. The type specimen was the only one sent, and now belongs to the Museum of Natural History of New York, for whose fine collection I have secured it.

XXXIII.—*Stray Notes on Ornithology in India.*

By Allan Hume, C. B. No. VII.*

I MENTIONED in one of my former letters that *Otis tetrax* and *Pterocles alchata* (neither of which, so far as I know, occurs in India east of the Indus) are during the cold season by no means uncommon west of the Indus, at Murdan. By the kindness of Johnson, of the Guides, a taxidermist of mine has been working at this place during the last few months under that gentleman's supervision. It appears, from the first instalment of specimens received thence, that not only the two species above mentioned, but also *Corvus cornix, Corvus monedula, Corvus frugilegus, Ruticilla rufogularis, Alauda arvensis,* and several other species hitherto extremely rare in all Indian collections, are plentiful in this locality. But the great novelty which the collection contains is a splendid specimen (a female it is true) of *Otis tarda,* a species hitherto unrecorded from India. The bird was killed on the 23rd of December. It measured:—Length 33″; expanse 63″; tail from vent 8″·5; length of foot 2″·5; width of foot 2″·75; the wings when closed reached to within 3″·5 of end of tail. It weighed 8·25 lbs.; and the contents of the stomach were green mustard leaves. Five or six birds were seen, amongst which was at least one male; but only this single specimen could be procured, as the birds were very wary.

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* No. VI. *anteà*, p. 23.

In No. 2 of Part I. of my "Rough Notes," I provisionally referred two young Fishing Eagles, obtained in the Etawah district, to *Haliæetus pelagica.* Since then I have obtained from Europe a young specimen of *H. albicilla,* corresponding exactly with my birds; and I have now received from Murdan a perfectly adult male of this latter species, as well as a young female corresponding with the young birds procured in Etawah*. The male was 32″ in length, with an expanse of 82″, and weighed 9·25 lbs. The female, a young bird, measured 35″ in length, and 86″ in expanse, but only weighed 6·5 lbs. I should add that in the Calcutta Museum I found a specimen of the young of this species, procured apparently in Lower Bengal and labelled *H. fulviventer* or *H. leucoryphus,* I forget which. The labels, however, of the mounted birds appear to have been so transposed during the interregnum that occurred between Mr. Blyth's departure and Mr. Anderson's advent, that it is impossible to be certain whether this specimen really was obtained in Lower Bengal.

An unnamed, but, as I believe, not unobserved species of Lark, of which numerous specimens have been sent from Murdan, remains to be characterized. It is intermediate between

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[* *Cf.* Jerdon, *anteà*, p. 336.—Ed.]

Alauda pispoletta and *Alaudala raytal*; and as it is, I believe, the species to which Adams refers (P. Z. S. 1858, p. 485) as "abundant on the banks of the Indus and Northern Scinde; size of the Grey Linnet; colour a sandy brown; bill short and nearly conical; hind claw long and curved; tail moderate and slightly forked, the upper feathers of which are black,"—I have named it

ALAUDA ADAMSI.

This new species at a first glance so closely resembles *Alaudala raytal* that I had erroneously so named it; but it differs in a few particulars so conspicuously that no doubt as to its specific distinctness can exist. In size and colour, and in most of its variations of plumage it is, to judge from a series of more than a dozen of each, absolutely undistinguishable from *A. raytal*. But whereas the bill of the latter is more lengthened and slender than those of the true Larks (measuring at front 0·5″, not 0·38″, as Jerdon wrongly gives it), the bill of *A. adamsi* is that of a true Lark, never measuring in front more than 0·36″. The bill of the latter, besides being shorter, is much stouter and has the culmen far more curved. It is brown too, bluish horny at base of the lower mandible, and not pale yellowish horny with a faint brownish tinge on the culmen as in *A. raytal*. The legs are fleshy brown, not yellowish fleshy as in the latter; and the hind claw (though not long, being about 0·34″) is *slightly* longer than that of *A. raytal*. Jerdon gives the wing of the latter as 3″; but none of my numerous specimens have it less than 3·15″, and it runs to 3·3″. The wing of *A. adamsi* is perhaps a shade longer, and varies from 3·2″ to 3·4″. The tail is "moderate and slightly forked;" but I see nothing of black upper feathers. True, in certain stages of plumage the lateral tail-feathers nearest the central ones are a *very* dark brown; but this is also to a certain extent the case with *A. raytal*. In this point alone does my new bird differ from that noticed, but left unnamed, by Adams. We have now a most interesting series of Old-World short-toed Larks—*calendrella, brachydactyla, pispoletta, adamsi,* and *Alaudala raytal*.

Whether the latter bird should really be generically separated is doubtful; the bills of *A. raytal* and *A. adamsi* differ no more than do those of *Melanocorypha maxima* and *M. tatarica,* which they respectively greatly resemble.

One stage of the plumage of *A. adamsi* deserves special mention, because I have observed nothing analogous in *A. raytal.* Only one single specimen exhibits this stage. The date on which it was procured has unfortunately not been noted; but I conclude it to be in the nuptial garb.

In this stage each primary has a broad subterminal somewhat silvery or slightly greyish-white band, which, except in the first two or three, extends over both webs; the outer webs of the three tail-feathers next the central ones become almost wholly of this colour, and the inner webs are greatly blanched or, more properly, appear to be overlaid with this same greyish white. Is this an accidental variety? There is nothing in the single specimen before me to decide this question.

To Captain Unwin, of the Guides, I am indebted for a large collection of birds made by the taxidermist above alluded to under Captain Unwin's supervision, in the Agrore Valley and the neighbourhood of Abbotabad.

Besides specimens of many of the birds noticed from Murdan, it contains numerous specimens of *Saxicola kingi* (nobis), three unmistakable examples of *Aquila hastata* with an egg of this species, of which a full notice will appear in Part 1, No. 3, of my "Rough Notes," and specimens of what I believe to be a new Goatsucker, which I characterize as

CAPRIMULGUS UNWINI.

This species has the upper three-fourths of the tarsus feathered in front. In both sexes the two outer tail-feathers on each side are tipped with white; but the tippings are about 1·5″ and 1·0″ broad in the male on the outer and penultimate feathers respectively, and only about 0·75″ and 0·4″ in the female; and in the latter sex the white is less pure. *Both* sexes have a white spot on the inner webs of the first three, and a corresponding one on the outer webs of the second and third primaries; but here again, while the spots on the inner webs of the male are about one inch broad, those of the female are about half that size.

This species therefore differs in its leading characteristics from all our Indian Goatsuckers. In general appearance it most resembles *C. kelaarti*; but as regards the white on the tail and the extent of the feathering of the tarsus it belongs to a different group from this species and *C. indicus.* The best description I can give of its plumage is, that it is an excessively pale and grey version of *C. indicus,* and that, while (with the exception of the difference in the size of the white markings on tail and wings) the sexes closely resemble each other, the under tail-coverts of the male are a uniform rufous buff, while those of the female are somewhat paler and are very distinctly barred with narrow bars more than a quarter of an inch apart.

The dimensions of a female measured in the flesh were:—Length 10·25″; expanse 19·25″; tail 4·75″; wing 6·95″. Wings when closed reached to within one inch of the end of tail.

The male (not measured in the flesh) is slightly larger, and has the wing 7·2″ long.

Through the kindness of Dr. Henderson, the medical officer of the party, the birds collected during the Yarkand Expedition have been submitted to me for examination. Dr. Henderson and I contemplate publishing shortly some notes on the ornithology of the expedition, with a few plates of the new and hitherto unfigured species of which he obtained specimens. In the mean time I here characterize briefly seven species which I believe to be new to science:—

1. **Falco hendersoni**, sp. nov. The Shanghar.

Male.—Dimensions: length 20 inches; wing 14; tail from vent 7·5; tarsus 2·15, feathered for 1·3; mid toe to root of claw 1·7; its claw, straight from root to point, 0.63.

Plumage.—Upper surface like a female Kestrel, brown and grey brown, regularly and broadly barred throughout, except on the head, with bright rufous. Below creamy white, nearly spotless, except on the flanks, where it is broadly barred with dark brown*.

2. **Galerida magna**, sp. nov. The Crested Steppe-Lark.

Male.—Dimensions: length 8·0 inches; expanse 14·0; tail 3·0; wing 4·4; bill at front 0·75.

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* [Probably the same as *F. milvipes*, Jerdon, *anteà*, p. 240.—Ed.]

Plumage.—Closely resembles *G. cristata*, but greatly exceeds it in size, and has in the adult a considerably fuller and longer crest. Its general tint is more sandy rufescent, or desert-colour, than is usual in *G. cristata*, and the striations on the back are nearly obsolete.

3. SAXICOLA HENDERSONI, sp. nov. Henderson's Stonechat.

Male.—Dimensions: length 6·0 inches; expanse 11·0; tail 2·7; wing 3·75; bill at front 0·45; tarsus 0·95.

Plumage.—Somewhat of the *S. atrigularis* type; differs in being blacker above and having the whole tail pure white, except the terminal three-fourths of the two central tail-feathers, which are black, and a terminal black band on the two exterior laterals, 0·7″ wide on the exterior ones, 0·4″ on the penultimate ones, and a black spot at the tip of the others, decreasing rapidly in size as the feathers approach the central ones, and in some specimens disappearing entirely on those next to these latter.

4. TROCHALOPTERON SIMILE, sp. nov.

Exactly resembles *T. variegatum*, which it replaces in the far north-west, except that the grey portions of the primaries and tail-feathers are pure French-grey, entirely untinged with yellow, olive, or orange.

5. PODOCES HUMILIS, sp. nov. The Dingy Chough-Thrush.

Male.—Dimensions: length 7·5 inches; tail 2·8; wing 3·75; bill at front 0·97 to 1; tarsus 1·25.

Plumage.—Forehead, lores, and an indistinct streak over the fore part of the eye fulvous white. Front, top, and back of the head, back, scapulars, and rump a dull earthy brown; a broad yellowish-white patch upon the nape. The four central tail-feathers blackish brown, tipped and margined with a paler hue. Lateral tail-feathers white, tipped and margined on exterior webs with dingy fulvous. Wings brown, the quills slightly darker brown, narrowly margined and tipped with paler brown. Lower parts dingy fulvous white.

6. PODOCES HENDERSONI, sp. nov. Henderson's Chough-Thrush.

Male.—Dimensions: length 11·5 inches; expanse 18; tail 4·2; wing 5·4; bill at front 1·5; tarsus 1·6.

Plumage.—Tail, quills (except a broad white bar), the greater coverts, and the whole top of the head and nape black, with a metallic purplish blue lustre. Most of the feathers of the head with a minute rufescent white speck at the tip. All the primaries with a very broad white bar extending from near the bases to near the tips, and, except on the first primary, occupying the outer as well as the inner webs. The rest of the plumage somewhat pale Jay-colour, a mixture of pale rufous and fulvous fawn, with, especially on the back and rump, a vinaceous tinge, becoming paler beneath and albescent on the chin, cheeks, and lower tail-coverts.

7. SUYA ALBOSUPERCILIARIS, sp. nov. The Yarkand Warbler.

Male.—Dimensions: length 7 inches; expanse 8; tail from vent 4; wing 2·5; bill at front 0·55; tarsus 0·95.

Plumage.—A long superciliary stripe from the nostrils over the lores, eyes, and ear-coverts white. A dark brown moustachial stripe from the gape, under the eyes and ear-coverts. Top and back of the head reddish desert-colour or pale rufous brown, with a faint vinaceous tinge towards the forehead, each feather with a narrow dark brown central stripe; back of the neck, back, and rump desert-colour, the feathers of the back with dark central streaks. Chin, throat, and lower parts white, tinged on breast, flanks, and tibial feathers with pale rufous buff. Wings brown; tail dark brown, with numerous narrow, close-set, obsolete bars, only seen in certain lights.

All these and some other known, but hitherto unfigured, species, will be figured in the little brochure that Dr. Henderson and I are preparing.

It will be remembered that I questioned the occurrence of the true Golden Eagle within our limits. To the kindness of Mr. Wilson, better known as "Mountaineer," I now owe two noble specimens of this species, shot between Mussowree and the Snowy Range, in the neighbourhood of the latter, and also a valuable note on the distribution and habits of the species in the Himalayahs, which will appear in Part I. No. 3 of my "Rough Notes."

Mr. Gould has lately characterized a new Eastern Starling under the name of *Sturnus purpurascens*. Allow me to characterize another as

STURNUS NITENS, sp. nov.

Dimensions: length 7·75 inches; bill at front 0·95; wing 4·75; tail 2·6; tarsus 1·1.

Description.—Bill yellow. Legs and feet reddish brown.

Plumage:—Whole bird absolutely spotless. Face, head, and throat deep purplish blue; ear-coverts with a greenish gloss. Neck all round, upper back, and breast a bright very ruddy purple; lower portion of back and upper tail-coverts with a coppery and green gloss. Abdomen black, with a green metallic gloss. Wing-coverts dark green, with a golden gloss. Under tail-coverts black, with a faint purple and green gloss.

This species is allied to *S. unicolor* of Europe, but differs in being much smaller, having a much less compressed and more spatulate-shaped bill, much shorter breast-hackles, smaller feet, feebler claws, and in its brilliant plumage, so different from the nearly uniform purplish black of the Sardinian Starling.

Habitat. Cashmere, Peshawur Valley, and Afghanistan.

Dr. Henderson and I propose to figure this and other new species in our forthcoming notes on the ornithology of the Yarkand Expedition.

Since writing my note on *Otis tarda* I have received, in a second batch of birds from Murdan, what I believe is even a greater novelty, viz. a magnificent specimen of the great Snowy Owl (*Nyctea nivea*).

I have repeatedly received information of the occurrence in the cliffs overhanging the Cabul river and other localities at the western extremity of the Peshawur Valley, of a huge white Owl; but it never occurred to me that this could be the Snowy Owl, considering the geographical position of the Peshawur Valley, which hardly passes 34° north latitude.

The acquisition of this specimen sets the matter at rest. The bird measured in the flesh by Dr. Johnson was a male. Length 23″; wing 17·25″; expanse 60″; tail from vent 9·25″. Foot, greatest length 4″, greatest width 4·25″. Wings when closed reached to within 2″ of end of tail. Weight 4 lbs. 12 oz.

Bill black; irides bright yellow. The specimen, though not a young bird, is not a very old one, as the whole upper surface is barred transversely with brown, as are also the sides and flanks and the greater portion of the middle of the abdomen. The whole of the lores, forehead, broad streak over the eye, cheeks, ear-coverts, chin, throat, middle of breast, middle of lower abdomen, vent, lower tail-coverts, legs and feet-feathers, axillaries, wing-lining, and nape unbarred white. The rump and upper tail-coverts sparingly barred. The rest of the plumage pretty regularly barred.

My shikaree, who was with Dr. Johnson and who has now returned to me, reports having seen several other and some much larger specimens. The occurrence of this species, apparently as a permanent resident (for the bird was killed on the 3rd March), in the mountains separating Afghanistan from the Peshawur Valley appears to me to be a most noteworthy fact.

I have long had in my collection a very beautiful Thrush, which, having never carefully examined, I referred to *Turdus chrysolaus*, Temm., *Geocichla dissimilis*, Blyth, olim.

Having now looked up Mr. Blyth's original description, and consulted the 'Fauna Japonica' and the 'Planches Coloriées,' I have ascertained that my specimen does not belong to this species. It may possibly prove to be well known; but I believe it to be new, and I will therefore take this opportunity of characterizing it very briefly:—

GEOCICHLA TRICOLOR, sp. nov.

Dimensions (dry skin): length 8·5 inches; wing 4·6; tail from vent 3·2; bill at front 0·7; tarsus 1·1.

Description.—Bill yellow; legs and feet fleshy yellow.

Plumage:—The whole head, neck, throat, breast, back, wings, upper tail-coverts, and tail dusky blackish slate-colour, almost quite black upon the top and back of the head, greyer on back and rump, and browner on quills and lateral tail-feathers. Wing-lining, lateral portions of upper abdomen, sides, and tibial feathers bright orange-ferruginous; centre of upper two-thirds of abdomen, whole of lower two-thirds of abdomen, vent, flanks, and lower tail-coverts, and the extreme tip of the chin pure white.

Habitat. Hill Tipperah.

I have lately received from Capt. Unwin, of the 5th Goorkhas, a pair of Swans, killed on the 17th January 1871 at the Jubbee stream, on the borders of the Hazara and Rawulpindee districts. Swans appear to be regular annual visitants to this locality and several other places lying between Rawulpindee and the western limits of the Peshawur Valley. Neither of these Swans is adult. The general colour of the lower surface is a dull white; of the upper whitey-brown. The crown and occiput wood-brown; the greater portion of the wing, the scapulars, and rump are wood- or sandy brown. There is nowhere any trace of a "sooty grey." The brown is essentially a buffy or sandy brown, though here and there, as in the feathers of the base of the neck, a faint greyish shade is intermingled.

These birds are therefore clearly not the Polish Swan, which is white at all ages. The bill exhibits no trace of a tubercle; the feathers of the forehead are prolonged to a point, only very slightly truncated. The colouring of the soft parts was carefully noted in the fresh specimen by Capt. Unwin, and even in the dried specimen is clearly distinguishable. If from each side of the frontal tongue of feathers, about half an inch from its point, a slightly curving line be drawn to a point on the edge of the upper mandible about a quarter of an inch from the gape, the whole of the space enclosed by such line between it and the eye is perfectly black. At the extreme point of the frontal feathers, again, is a black band about a quarter of an inch wide, which extends right and left over the whole narial space. The nail is black; the rest of the bill was light grey. The legs and feet, I may add, were greyish black. Both male and female, though differing somewhat in size, are precisely similar both as regards plumage and coloration of the bill. The bill is slightly spatulate. In the male the upper mandible is 1·1″ wide opposite the nostrils, and 1·23″ wide near the tip. The following are dimensions of both birds measured in the flesh:—

Male. Length 55·5 inches; expanse 84·37; wing 23·12; tail from vent 8·5; bill at front, straight from termination of frontal plumes to tip 3·5, from anterior angle of eye 5·15, from gape 4; tarsus 4·05; mid toe to root of claw 5; hind toe 1; foot, greatest length, 8·37; breadth 6·62. Weight 15 lbs.

Female. Length 53·12 inches; expanse 84·37; wing 21·38; bill at front, from frontal plumes straight to tip 3·55, from anterior angle of eye 4·75, from gape 3·9; tarsus 3·8; mid toe to root of claw 4·8; hind toe 0·7; foot, greatest length 7·5, greatest width 6·5. Weight 13 lbs. In both the irides were dark brown.

I cannot satisfactorily identify this species; it is too large for *Cygnus americanus*; and, moreover, neither the distribution of colour on the bill corresponds, nor is there any trace of either the deep leaden tint of the plumage of the young or the light bluish grey of the adult in winter. It is, of course, much too big for Bewick's Swan; while, as regards the Hooper, the black of the bill is at the base, and not at the tip as in this latter.

There remains the Mute Swan, which unfortunately is not included by Macgillivray, and in regard to which neither Yarrell nor the Naturalist's Library gives detailed measurements or any full description of the young; but it would appear that the colouring of the young in this species is a nearly uniform sooty greyish brown above and a lighter shade of greyish brown below. Moreover there is not the faintest trace of a tubercle, and the shape of the bill is entirely that of *C. americanus* and not at all that of *C. olor* as figured by Yarrell. From the frontal feathers to beyond the end of the nasal fossæ, a distance of very nearly 1½ inch, the culmen is a perfectly straight line. Beyond this there is a very shallow concavity to the posterior margin of the nail. It seems hardly possible that this should be a new species; but unless, notwithstanding all that I have said, they are really the young of *C. olor* or else of *C. buccinator** (of which latter I know nothing), they must be new, and should bear the name of their discoverer, Captain Unwin, and should stand as *Cygnus unwini.*

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* [The bill of *C. buccinator* is entirely black. The birds here described appear to us to be referable to the young of *Cygnus olor*, the tubercle of the bill being undeveloped and the yellow of the anterior portion of the bill not yet assumed.—Ed.]

XXXIV.—*On Seven new or lately described Species of African Birds.* By R. B. Sharpe, F.L.S., Libr. Z.S., &c.

(Plate XII.)

Having lately received some considerable collections of birds from Africa, I hasten to describe some of the new species contained in them. At the same time I take the present opportunity of giving an illustration of the new *Scotopelia* described in an earlier number of this Journal (*anteà*, p. 101).

1. Caprimulgus cinnamomeus, sp. n.

C. cinnamomeus, vix nigricante variegatus: pileo et scapularibus punctulis nigris subtriquetris obscurè notatis: remigibus et rectricibus rufis, nigro transfasciatis et irregulariter vermiculatis, his angustiùs: subtùs pallidè fulvescenti-cinnamomeus, pectore saturatiore, ubique fasciis obscuris nigricantibus transvermiculato: gulâ imâ albicante: long. tota 8·5 poll. Angl., alæ 5·9, caudæ 4·5, tarsi 0·5, rostr. culm. 0·3.

Hab. Lagos. Purchased of Mr. Cutter.

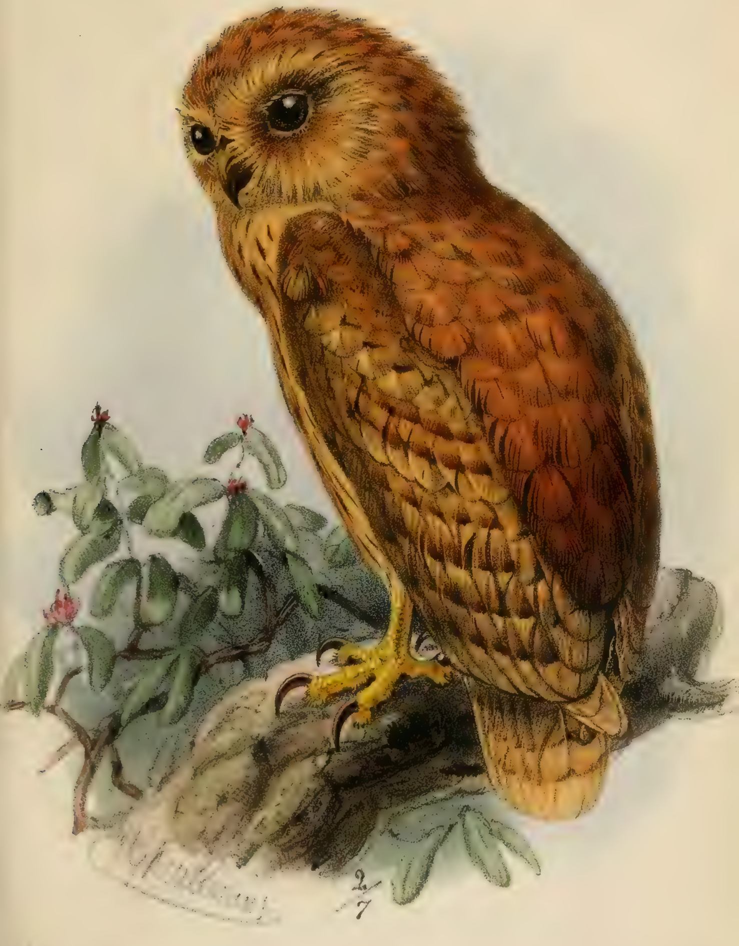
Dr. Finsch, who has seen the type of this species, suggests that it might be *C. fulviventris* of Hartlaub, from Angola; but I have examined the type of the latter in M. Monteiro's collection, and it is not the same as my bird. Moreover on my mentioning to Governor Ussher that a red Goatsucker was to be looked for at Lagos, he told me that he knew the bird, which he has often seen in that locality, so that we may look for additional specimens before long.

2. Irrisor castaneiceps, sp. n.

I. pileo undique castaneo: dorso toto et tectricibus alarum æneo-viridibus: remigibus et rectricibus nitenter chalybeis, his violaceo nitentibus: corpore subtùs nigricante, sordidè viridi nitente: subalaribus æneo-cyaneis: rostro nigricante, ad basin flavicante: pedibus nigris: long. tota 11 poll., alæ 4·2, caudæ 8·6, tarsi 0·7, rostr. culm. 1·3.

This bird is the supposed female or young of *Irrisor bollii*, Hartl. J. f. O. 1858, p. 445, but clearly belongs to quite another species. I have in my collection the true young bird of *I. bollii*, which is altogether larger and is differently coloured. On my

Ibis 1871. Pl. XII



J G Keulemans lith.

M & N Hanhart imp

SCOTOPELIA USSHERI.

mentioning to Governor Ussher that Dr. Finsch, to whom I had sent my typical example, believed it to be *I. bollii,* he informed me that this must be a mistake; for his collector in Fantee had brought him the bird as a very rare species and different from *I. bollii,* of which Mr. Ussher has seen during his residence in Fantee about a dozen specimens, while of *I. castaneiceps* he has seen but this one. A comparison of the two birds, however, is all that is needed to show their entire distinctness from each other.

3. Crateropus haynesi, sp. n.

Crateropus atripennis, Hartl. Orn. W. Afr. p. 79 (1856, *nec* Sw.).

C. affinis *C. atripenni,* Sw., sed capite nigro et gutture circumscriptè cinereo distinguendus: long. tota 7·5, alæ 4·5, caudæ 3·4, tarsi 1·45, rostr. culm. 1·0.

Hab. Accra (*Haynes*).

This species differs from the true *C. atripennis* in the particulars which are stated in the accompanying Table.

C. atripennis, Sw.	*C. haynesi,* Sharpe.
Crown grey, duller in the centre, the frontal feathers tipped with white, the plumes long and oval.	Crown black, the feathers shorter and more rounded.
Throat and fore part of the chest grey.	Throat alone grey.
Feet yellowish, with orange-coloured nails.	Feet dark brown, with orange-coloured nails.

It would appear from Dr. Hartlaub's description (*l. c.*) that he took his characters of the present species from a Gold-Coast specimen. I have now lying before me three examples from the Gambia, all of them agreeing with Swainson's description and differing from that of Dr. Hartlaub in the way above mentioned.

4. Ægithalus caroli, sp. n.

Ægithalus minutus, Sharpe, Cat. Afr. B. p. 35 (*nec* Shaw).

Æ. supra olivaceo-cinerascens, uropygio magis fulvescente: fronte et facie laterali flavidis, brunneo paullò variis: remigibus et caudâ fumoso-brunneis, angustè olivaceo marginatis: subtùs albescens, pectore imo cum abdomine et subcaudalibus pallidè ferrugineis: subalaribus albis: rostro et pedibus nigricantibus: long. tota 3, alæ 2·1, caudæ 1·25, tarsi 0·55, rostr. culm. 0·35.

Hab. Ovaquenyama, Damara Land, May 1867 (*C. J. Andersson*).

I am indebted to Mr. Gurney for the correction of an error I had made in my 'Catalogue of African Birds,' in referring the bird above described to the *Ægithalus minutus* of Shaw. This name is founded on the Bec-fleur of Levaillant (Ois. d.'Afr. pl. 134), and must therefore be regarded as a synonym of *Æ. capensis.* Mr. Gurney and I were of opinion that the Damara bird might be *Æ. pensilis* of Lichtenstein, of which species no description has ever been published. On sending, however, one of my specimens to Professor Peters, he very kindly compared it with Lichtenstein's type in the Berlin Museum, and informed me that the two birds are not identical. I have therefore named the species after the late Mr. Charles John Andersson, who originally discovered it.

5. ARTOMYIAS USSHERI, sp. n.

A. fuliginoso-niger: subtùs cinerascens, pectore medio albicante: subcaudalibus conspicuè albo marginatis: gulâ cum loris albicantibus: genis albido lavatis: tectricibus alarum majoribus et remigum rectricumque apicibus albis: rostro et pedibus nigricanti-brunneis: long. tota 4·7, alæ 3·1, caudæ 2·0, tarsi 0·5, rostr. culm. 0·3.

Hab. Fantee. Collected by Governor Ussher.

This bird is strictly congeneric with *Artomyias fuliginosus*; and Dr. Finsch thinks that it may ultimately turn out to be a stage of plumage of that bird, as Dr. Hartlaub (Orn. W. Afr. p. 272) has described the young of that species as having the abdomen, rump, and quills spotted with white. I think, however, that there is very little chance of *A. ussheri* being the young of *A. fuliginosus*; for the markings are characteristically different, and I should incline to believe that the grey plumage is most probably the adult dress. In that case the Fantee bird could not be the same as that from Gaboon, as it is rather smaller. Mr. Ussher shot the type specimen himself at Abrobonko, on the 14th of January 1871. "It was killed," he writes, "on a dead limb over the stream, whence it chased insects and returned."

6. Laniarius nigrithorax, sp. n.

L. similis *L. multicolori,* sed gutture et pectore antico nigris facilè distinguendus: long. tota 7·7, alæ 3·9, caudæ 3·8, tarsi 1·0, rostr. culm. 0·75.

Hab. Accra. Collected by Captain Haynes.

This beautiful Shrike finds its nearest ally in *L. multicolor,* G. R. Gray, but is at once distinguished from this, as also from every other species of the genus *Laniarius,* by its black breast.

7. Scotopelia ussheri. (Plate XII.)

Scotopelia ussheri, Sharpe, *anteà.,* p. 101.

This fine Owl was described by me at the beginning of the present year. Mr. Ussher informs me that he received it alive; but it unfortuately died before it could be sent home.

XXXV.—*Index of the Ornithological Literature of* 1870. By Osbert Salvin, M.A., F.L.S. &c., and P. L. Sclater, M.A., Ph.D., F.R.S. &c.

[Since 'The Ibis' was first established, it has been our custom to notice in each number the appearance of all the more important works on ornithology. Much as may be said in favour of this system of recording contemporaneous publications, it cannot be denied that the results of the plan as a permanent benefit to ornithological study have proved to be less advantageous than ought to have ensued from the amount of labour bestowed upon it. Under these circumstances, we have determined to endeavour to continue our record of current ornithological literature on a better system. Commencing with the present article, we propose to give in the October Number of 'The Ibis' of each year a short notice of every book and paper having any claim to importance as regards ornithology published during the previous year. In this we shall make no exception, the papers of this Journal itself being included in their proper places.

All the notices will be arranged alphabetically under the sur-name of the author; so that, on turning to the name of an author in any given year, it will be easy to find where the papers written by him were published. Furthermore the name of every new species described during the year will be mentioned in the notice of the paper containing its description. The name of every species of which a figure is published will be likewise mentioned. By this plan the names of the species newly described, and of those figured, will be included in the Index to 'The Ibis,' which will thus also serve as an index to the present article.

We trust that this arrangement will be continued every year, and will prove to be of permanent value. But we must remind our readers that much of the completeness of our work depends upon their cooperation, and that it is only by forwarding either copies of their papers, or lists of them, that our undertaking can attain that perfection at which, in the interest of all ornithologists, we aim.

The Editor of this Journal has therefore to request that authors of ornithological papers in all countries will favour him with copies of their publications, in order that they may not be overlooked in this yearly article. A short abstract of the contents of each communication would be also desirable.]

ADAMS, ARTHUR.

Travels of a Naturalist in Japan and Manchuria. London: 1870.

Contains notes on the habits of various birds, for a full notice of which see 'The Zoologist' for 1870.

ALLEN, J. A.

Notes on some of the rarer birds of Massachusetts. Am. Nat. iii. pp. 505–519, 568–585, 631–648.

The whole number of birds now known to occur in Massachusetts is stated to be 300. It is to some of the less known of these that the present notes apply.

ALLÉON, A., et VIAN, JULES.

Des Migrations des Oiseaux de Proie sur le Bosphore de Constantinople. Rev. Zool. 1870, pp. 81, 129, 161.

These are additional observations to those already published by the same authors in the 'Revue' for 1869, on the birds of prey which cross the Bosphorus upon their migration (*cf.* Ibis, 1870, p. 60). An Indian Buzzard is described (p. 161) from a skin sent by Mr. Hume to M. Jules Verreaux, under the name "*Buse des Monts Himalaya,*" to which the authors are inclined to refer some specimens obtained by them in the forest of Belgrade.

BAIRD. See WHITNEY.

BALDAMUS, Dr. E.

1. *Ornithologisches aus meinen Reise-Tagebüchern.* J. für Orn. 1870, pp. 94–118.

These notes refer to Swiss birds observed in the Canton Grison, especially in the district of the Upper Engadine. A list of 86 species is given at the end of the article. (See SARATZ, JEAN.)

2. *Eine Brutstelle von* Branta rufina *in Mitteldeutschland.* J. für Orn. 1870, pp. 278–281.

Describes a breeding-place of *Branta rufina,* which appears to have been frequented by this species for at least four years.

BALL, V.

1. *Brief notes on the Geology and on the Fauna in the neighbourhood of Nancowry Harbour, Nicobar Islands.* J. A. S. B. 1870, pt. ii. p. 25.

Contains notes on 21 species of birds observed, two of which (a *Turnix* and an *Ægialitis*) have not been previously obtained on the Nicobars. But of these specimens were not procured, and the species are consequently not determined.

2. *Notes on Birds observed in the neighbourhood of Port Blair, Andaman Islands, during the month of August* 1869. J. A. S. B. 1870, pt. ii. p. 240.

Gives remarks on 22 species, all previously known, from the Andamans, though two are somewhat doubtful (*Ninox,* sp., and *Edolius,* sp.)

BANNISTER, B. H.

A sketch of the classification of the American Anserinæ. Proc. Ac. N. Sc. Phil. 1870, pp. 130–132.

The Geese of both continents of America are, in this paper, divided into seven genera, for which brief characters, some of them very trivial, are given. Three new generic names are introduced, viz. *Oressochen* (type *Anser melanopterus*, Eyt.), *Clœtrophus* (type *Chloephaga poliocephala*, G. R. Gray), and *Philacte* (type *Anser canagica*, Séwast.).

Barkly, Sir H.

Notes on the Fauna and Flora of Round Island. Trans. Roy. Soc. Mauritius, 1870, pp. 109–130.

A very interesting paper, in which, however, birds are barely mentioned, that portion of the fauna having been investigated by Mr. Edward Newton during the year 1860 (*cf.* Ibis, 1861, p. 180).

Beavan, R. C.

Additional Notes on various Indian Birds. Ibis, 1870, pp. 310–327.

A continuation of former papers on the same subject (Ibis, 1869, p. 426). The present notes apply to 40 species of birds. No new species are described; but notes on all are given, as well as measurements of a considerable number.

Bettoni, Eugenio.

Storia naturale degli Uccelli che nidificano in Lombardia. Milano: vol. ii. fasc. xxiv–xxvii. 1870.

The species figured in this work during the year 1870 are as follows:—fasc. xxiv. t. 78, *Picus minor*; t. 79, *Hypolais polyglotta*: fasc. xxv. t. 80, *Columba livia*; t. 81, *Meleagris gallopavo, Pavo cristatus, Numida meleagris*, young only: fasc. xxvi. t. 82, *Lagopus mutus*; t. 83, *Porzana maruetta*: fasc. xxvii. t. 84, *Sterna hirundo*; t. v. contains figures of eggs: fasc. xxviii. t. 85, *Lyrurus tetrix*: fasc. xxix. t. 86, *Anas boschas*: fasc. xxx. t. 87, *Lanius excubitor*; t. 88, *Certhia familiaris*: fasc. xxxi. t. 89, *Actitis hypoleucus*; t. 90, *Parus ater*: fasc. xxxii. t. 91, *Crex pratensis*: fasc. xxxiii. t. 92, *Cuculus canorus*; t. 93, *Palumbœna columbella*: fasc. xxxiv. t. 94, *Perdix saxatilis*; t. 95, *Turdus musicus*: fasc. xxxv. t. 96, *Gallinula chloropus*; t. 97, *Emberiza cia*: fasc. xxxvi. t. 98, *Gavia ridibunda*; t. vi. eggs: fasc. xxxvii. t. 100, *Phyllopneuste rufa*; t. 104, *Merops apiaster*. All the figures of these birds are accompanied with a representation of their young in an early stage of plumage.

BIANCONI, J. J.

*Recherches sur les affinités naturelles de l'Æ*pyornis. Compt. Rend. lxx. p. 162, 1870.

Contains remarks upon the affinities of *Æpyornis maxima*, based upon an examination of a femur and tibia of that species.

BLANFORD, W. T.

1. *Observations on the Geology and Zoology of Abyssinia, made during the progress of the British Expedition through that country in* 1867–68. With Illustrations and Geological Maps. London: 1870. 8vo, pp. 487.

This work has been already noticed in these pages (*cf.* Ibis, 1870, p. 501). The illustrations represent *Eremomela griseiflava*, Heugl., *Hirundo æthiopica, Phylloscopus abyssinicus, Ruticilla* (?) *fuscicaudata, Alauda pretermissa, Crithagra flavivertex*, and *Pratincola semitorquata*, Heugl.

2. *List of Birds obtained in the Irawadi valley around Ava, Thayet Myo, and Bassein.* Ibis, 1870, pp. 462–470.

This is a list of birds collected in 1861–62, 113 in number. Precise localities where they were obtained are given, and also notes on many of the species.

3. *Letter from.* Ibis, 1870, p. 533.

On the female of *Cyornis tickelliæ*, on the supposed identity of *Erythrosterna leucura* and *E. parva*, and on the range of *Circus melanoleucus*. Also remarks on the "so-called" Indian Region.

BLYTH, EDWARD.

Notes relating chiefly to the Birds of India. Ibis, 1870, pp. 157–176.

These notes have especial reference to specimens in the Leyden Museum, and were made during an inspection of that collection in the autumn of 1869. The following new species are described:—*Picus westermanni*, from a specimen labelled "Himalaya" in the Amsterdam Museum; *Cyornis simplex, Geocichla mutabilis, Abrornis schwaneri, A. atricapilla, Sylvia presbytes*, and *S. virescens*. Several of these species are described with the MS. names of S. Müller and Temminck, under which they appeared in the Leyden Museum.

BOARDMAN, GEORGE A.

The Labrador Duck. Am. Nat. iii. p. 383.

A note on the supposed occurrence of *Camptolæmus labradorus* on Long Island in 1868. No reason has as yet been given for the singular disappearance of this species, once so common, within the last few years.

BOCAGE, J. V. BARBOZA DU.

1. *Aves das possessões portuguezas d'Africa occidental. Quarta Lista.* Jorn. Sc. Lisb. 1870, pp. 333–352.

The 135 species mentioned in this list are from various points in the Portuguese possessions in West Africa, the precise locality in each case being given. There is a long note on *Buteo auguralis*, Salvad.; and a *Cypselus*, supposed to belong to a new species, is described but not named. Besides these and other notes, the following are described as new species:—*Anthus angolensis, Turdus verreauxi, Oriolus anderssoni, Telephonus anchietæ, Lamprocolius acuticaudus,* and *Francolinus hartlaubi.* At the end of the article several corrections are made to previous papers on the same subject. (*Cf*. Boc. Jorn. Sc. Lisb. ii., iv., v.)

2. *Note sur une nouvelle espèce de Pélican.* P. Z. S. 1870, p. 173.

The Pelican here described is called *Pelecanus sharpii*; and its characters are given.

3. *Note sur le jeune de l'année du* Pelecanus sharpii. P. Z. S. 1870, p. 409.

Describes the plumage of the young of this new Pelican from Angola.

BRAZIER, JOHN.

Notes on Gracula Kreffti. P. Z. S. 1870, pp. 551–552.

BREWER, T. M.

Sea-side Ornithology. Am. Nat. iii. pp. 223–235.

A popular account of some of the birds found on the coast of New England.

BROOKE, SIR VICTOR.

Letter from. Ibis, 1870, p. 538.

On the occurrence of *Astur atricapillus* in Ireland.

BROOKS, W. E.

Letter from. Ibis. 1870, pp. 288–291.

Indian species of the genera *Saxicola, Phyllopneuste, Phylloscopus, Reguloides, Aquila,* and *Neophron* are referred to in this letter.

BROWN, JOHN HARVIE.

Letter from. Ibis, 1870, p. 297.

On the situations chosen in Scotland by *Falco peregrinus* for its nest.

BRUHIN, TH. A.

Die Iris der Vögel, insbesondere der Raub-, Sumpf- und Schwimmvögel der deutschen Fauna, als unterscheidendes Merkmal der Arten, des Alters und Geschlechtes. Zool. Gart. 1870, p. 290.

Contains a list of a large number of German birds, and the colour of their irides shortly described, in parallel columns.

BUCKLEY, T. E. See ELWES, H. J.

BULLER, WALTER.

1. *Notes on the Ornithology of New Zealand.* Trans. N. Zeal. Inst. 1870, pp. 385–392.

Refers to Dr. Finsch's paper in 'The Ibis' (1869, pp. 378–381), criticising certain species described by Mr. Buller in a former number of the same journal (1869, pp. 37–43). The correctness of Dr. Finsch's identifications is admitted in some cases, whilst in others Mr. Buller reasserts his former views.

2. *Remarks on some disputed species of New-Zealand Birds.* Ibis, 1870, pp. 455–460.

The birds in question are some concerning the distinctness of which doubts have been expressed by Dr. Finsch in his article on New-Zealand birds (Ibis, 1869, pp. 378–381). Mr. Buller demurs to Dr. Finsch's judgment respecting some of them.

CABANIS, J.

1. *Ueber Bildung und Anzahl der seitlichen Steuerfedern bei* Gallinago, *und über* Gallinago heterocerca, *sp. n.* J. für Orn. 1870, p. 235.

The new species here described was obtained by Dr. Dybowsky on the shores of Lake Baikal.

2. *Ueber* Turdus pelios, *Bp., redivivus.* J. für Orn. 1870, p. 238.

T. pelios was originally described as coming from Central Asia; but its patria was afterwards referred to Abyssinia. Dr. Cabanis, having received a skin of the true *T. pelios* from the Amoor, now shows that the name *T. pelios* must after all be applied to the Central-Asiatic bird, and that the Abyssinian bird, which is slightly different, must bear the name *T. icterorhynchus*, Pr. Würt.

3. *Journal für Ornithologie*, 1870, t. ii., iii.

Plates of *Rhynchaceros deckeni*, Cab., and *Pterocles decoratus*, Cab., appear in the volume of this Journal for 1870, but without letterpress. The names will be found in the list of plates, p. iv., but not in the Index.

4. *Eier des* Opisthocomus cristatus. J. für Orn. 1870, pp. 318, 319, t. i.

The Minutes of the Twenty-fifth Monthly Meeting of the German Ornithological Society contain a note by Dr. Cabanis on the egg of this singular bird. Judging from the plate, the coloration of the egg helps us little towards placing the species in its correct position. It reminds one of eggs of *Sterna*, or even of *Rallus*. Still there is a look of some eggs of *Pterocles*, but nothing whatever to recall the *Cracidæ*. (*Cf.* Newton, P. Z. S. 1867, p. 164, t. xv. f. 6.)

5. *Ueber zwei sibirischer Flüevögel*, Accentor altaicus *et* erythropygus, *sp. n.* J. für Orn. 1870, pp. 456–459.

Both these species were procured on the south side of Lake Baikal by Dr. Dybowski. *Accentor erythropygus* here described as new is the *A. alpinus* of v. Middendorff and other writers on Siberian birds, but not of Gmelin.

6. *Ueber eine neue brasilische Nemosie oder Waldtangare*, Nemosia rourei, n. sp. J. für Orn. 1870, pp. 459–461.

The Tanager here described was obtained by Herr Carl Euler in Brazil at Muriahié, on the banks of the Parahyba.

CABANIS, J., REICHENOW, ANTON, und HELM, MAX.

General-Index zum Journal für Ornithologie. 1870, pp. 211.

In 1868 an Index was first appended to the yearly volume of the 'Journal für Ornithologie.' The present volume supplies the deficiency for the first fifteen volumes of the Journal, *i. e.* from 1853, the date of its appearance, to 1867. Thus we now have a complete index of this important serial, the want of which was much felt by working ornithologists; and we owe our best thanks to Dr. Cabanis, the editor, to Herr Anton Reichenow, and to Herr Max Helm, who have cooperated with him in elaborating this useful and necessary work.

CAMPANA, Dr.

De la texture et des caractères différentiels du poumon chez les Oiseaux. Compt. Rend. lxx. 1870, pp. 458–461. Deuxième note, pp. 525–529.

CARREAU, L. D., Missionnaire apostolique au Thibet.

Faisan de Lady Amherst. Bull. Soc. Acclim. ser. 2, vii. p. 502.

A letter addressed by M. Carreau to M. G. Andelle, dated Patang (Batong) 27th February, 1870, in which interesting details are given concerning the habits and mode of capture of *Thaumalea amherstiæ* at Ta-lin-pin and Ta-tsien-lou, on the Tibetian frontier. It appears that the sum there given to the natives for each living bird brought in was 20 sous. In Europe one pair of this bird were recently sold for about £160 ! Notes are also given upon some of the other Phasianidæ of this district, e. g. *Crossoptilon l'huysii* and *Ithaginis geoffroii.*

CLARK, J. W.

Letter from. Ibis, 1870, pp. 439–442.

Details the nidification and habits of the Flamingo (*Phœnicopterus antiquorum*) in the south of France.

COOPER, J. G.

1. *The Naturalist in California.* Am. Nat. iii. pp. 182–189, 470–481.

Contains numerous notes on Californian birds.

2. *The Fauna of Montana Territory.* Am. Nat. iii. pp. 31–35, 73–84. (Continued from vol. ii. p. 600.)

The two portions of this paper, though already noticed in the Zool. Record (vi. p. 47), seem to belong to the year 1870, being included in the volume for that year. 89 species are here mentioned, with short accompanying notes.

3. *Notes on the Fauna of the Upper Missouri.* Am. Nat. iii. pp. 294–299.

Enumerates a number of birds observed in this district.

COOPER, J. G. See WHITNEY.

COUES, ELLIOTT.

1. *The Natural History* of Quiscalus major. Ibis, 1870, pp. 367–378.

A full account of the range, habits, and affinities of this species.

2. *The Clapper-Rail.* Am. Nat. iii. pp. 600–607.

An excellent and amusing account of *Rallus crepitans*.

3. *Sea-side Homes; and what lived in them.* Am. Nat. iii. pp. 337–349.

Describes popularly the breeding-haunts of Terns and Plovers on the coast of Carolina.

COULON, LOUIS.

Bull. Soc. Neuch. 1870, p. 476.

A short account of a nearly perfect skeleton of the Moa (*Dinornus crassus*) recently acquired for the Museum at Neuchatel.

CUNNINGHAM, ROBERT O.

Notes on some Points in the Anatomy of three Kingfishers (Ceryle stellata, Dacelo gigas, *and* Alcedo ispida). P. Z. S. 1870, pp. 280–283, plate xxiv.

Some peculiarities in one of the superficial muscles of the back of the neck (*biventer cervicis*), in *Ceryle stellata*, as observed by the author in the Straits of Magellan, and an examination of the same muscles in *Dacelo gigas* and *Alcedo ispida*, form the chief subject matter of this paper. The distinction between the tongues of the three species is also examined, and attention is drawn to the difference between the lacrymal bones of *Dacelo* and those of *Alcedo* and *Ceryle*. A plate and a woodcut illustrate the points of anatomy discussed.

DALL, WILLIAM H.

An afternoon in Nicaragua. Am. Nat. iii. pp. 35–39.

Details an excursion into the woods near Greytown. Several birds were obtained, and amongst them a *Spermophila,* which was afterwards called by Mr. Lawrence *S. badiiventris,* but is now known to be *S. corvina* in immature plumage (*anteà,* p. 16).

DARWIN, CHARLES.

Notes on the Habits of the Pampas Woodpecker (Colaptes campestris). P. Z. S. 1870, p. 705.

These notes have reference to Mr. Hudson's account of this species, P.Z.S. 1870, p. 112. Mr. Darwin does not doubt Azara's and Mr. Hudson's observations showing that *C. campestris* frequents trees like an ordinary Woodpecker, but states that his own observations in Banda Oriental and on the northern bank of the Plata led him to believe that the bird lived on the ground. The beaks of some shot were muddy, and their tails showed no signs of abrasion. See HUDSON, W. H, also *anteà,* p. 308.

DAVID, PÈRE ARMAND.

Comptes Rendus, lxx. 1870, p. 538.

An extract by M. Milne-Edwards of a letter from Père David, dated from Szechuen, in which he describes a new species of *Crossoptilon* under the name *C. cærulescens.* Translated in Ann. N. H. ser. 4, v. p. 308 (1870).

DE SELYS-LONGCHAMPS, BARON.

Notes on various Birds observed in Italian Museums in 1866. Ibis, 1870, pp. 449–455.

The Museums containing the species upon which these notes were made are those of Turin, of Count Turati in Milan, of Florence, and of Pisa. Notes are added on *Columba turricola* of Bonaparte, on the occurrence in Sicily of *Porphyrio chloronotus,* and on *Passer italiæ.*

DESMEURE, M.

Reproduction d'Autruches à Florence. Bull. Soc. Acclim. ser. 2, vii. p. 205.

Contains an account of the nesting of *Struthio camelus* in the Zoological Garden of Florence in 1869. Two females were placed with one male, and laid in one nest; the male was the principal incubator, but was occasionally assisted by one of the females.

DIGGLES, SYLVESTER.

The Ornithology of Australia. Part 21. Queensland.

One part only of this work appears to have been issued in the year 1870. The species figured are *Buteo melanosternon, Halcyon pyrrhopygia, H. sordidus, Myzomela erythrocephala, M. sanguinolenta, M. pectoralis, M. nigra, M. obscura, Geopelia tranquilla, G. cuneata, Polytelis alexandræ, Dendrocygna eytoni,* and *D. arcuata.*

DRACHENFELS, BARON CARL.

1. *Briefliches über Zuchtversüche fremdländischer Vögel.* J. für Orn. 1870, pp. 145–150.

Some notes of interest to those who keep aviaries.

2. *Etwas über die Acclimatisationsfähigkeit des Goldfasans,* Thaumalea picta. J. für Orn. 1870, p. 383.

A short note on the acclimatization of the Gold Pheasant.

DRESSER, H. E., and SHARPE, R. B.

Notes on Lanius excubitor *and its allies.* P. Z. S. 1870, pp. 590–600.

Nine species are recognized as belonging to the group of Shrikes represented by *Lanius excubitor,* and their differences pointed out in a synoptic table. The most noticeable feature in this paper is the grouping of a host of synonyms under *Lanius lahtora,* the range of which is shown to be widely extended.

DRESSER, H. E. See SHARPE, R. B.

DUGÈS, ALFREDO.

Catalogo de Animales Vertebrados observados en la república Mexicana. Naturaleza, vol. i. p. 137.

A catalogue of names drawn up at Paris with the assistance of M. Jules Verreaux. The Spanish and Mexican equivalents are added, and one or two bare localities: 228 species of birds are enumerated. The article is dated Guanajuato, Aug. 5, 1869.

ELLIOT, D. G.

1. *Descriptions of some new Genera and Species of Birds belonging to the Families* Formicariidæ, Pachycephalidæ, *and* Sylviidæ. P. Z. S. 1870, p. 242, plates xix., xx.

Clytorhynchus pachycephaloïdes is a new genus and species of Pachycephalidæ (whatever this family may be), from New

Caledonia; *Clytoctantes alixii* a new genus and species of Formicariidæ, from Eastern Ecuador; and *Calamoherpe subflavescens* a new species from N.E. Asia: the two former are figured.

2. *Description of new Species of Pheasants from the Province of Yarkand, Eastern Turkestan, and from the Island of Formosa.* P. Z. S. 1870, pp. 402–409.

Three species are described, *Phasianus shawii, P. insignis,* and *P. formosanus,* and a list of nine species of *Phasianus* known to the author is given.

3. *Description of a new Species of Pheasant from the Province of Szechuen, China.* Ann. N. H. ser. 4, vol. vi. p. 312.

The species here described is called *Phasianus elegans,* the characters being taken from specimens living in the Zoological Society's Gardens.

4. *Description of a new Species of Humming-bird of the genus* Chrysolampis. Ann. N. H. ser. 4, vol. vi. p. 346.

Chrysolampis chlorolæma is the name proposed for this new species. In spite of what Mr. Elliot says to the contrary, we are of opinion that the proper place of this species is in the genus *Lampornis.*

5. *A Monograph of the* Phasianidæ, *or Family of the Pheasants.* Part i. 1870.

This, the first Part of Mr. Elliot's magnificent work, has already been noticed in these pages (*cf.* Ibis, 1870, p. 519). The species selected for representation are, *Pavo nigripennis, Phasianus soemmerringi, Polyplectron germaini, Crossoptilon thibetanum, Argus grayi, Euplocamus nycthemerus, Pucrasia macrolopha, Thaumalea amherstiæ, Gallus ferrugineus, Euplocamus albocristatus, Lophophorus l'huysii, Euplocamus prælatus, Ceriornis blythi, Numida mitrata,* and *Numida verreauxi.*

6. *Letter from.* Ibis, 1870, p. 300.

Contains a description of a new species of Guinea-fowl, *Numida verreauxi.*

7. *Remarks on some lately-described* Pittæ, *with a Synopsis of the Family as now known.* Ibis, 1870, pp. 408–421, plates xii., xiii.

Several species of Pittæ having been described since the publication of the author's monograph, he here reviews them with the following expression of his opinion as to their validity. *Pitta oreas,* Swinh., *P. megarhyncha,* Schl., *P. strenua,* Gould, *P. bankana,* Schl., are allowed to be distinct, though some of them only slightly so. *Pitta bertæ* is considered to be *Brachyurus moluccensis* sive *cyanopterus* ; *Pitta simillima*=*P. strepitans,* differing only in size; *P. digglesi*=*P. mackloti,* and *P. sanghirana*=*P. atricapilla.* A complete list of the species of this family follows, with a description of each. Plates of *Brachyurus megarhynchus, B. oreas,* and *B. bankanus,* are given, as well as woodcuts of the heads of *B. mackloti* and *B. strenuus,* and also of the so-called *B. coccineus* and *B. granatinus.*

Elwes, H. J.

Letter from. Ibis, 1870, pp. 526–528.

Contains notes on the ornithology of the Cardamum Hills of Travancore, made during a six weeks' tour through that district.

Elwes, H. J., and Buckley, T. E.

A List of the Birds of Turkey. Ibis, 1870, pp. 59–77 ; 188–201 ; 327–341.

A nominal list of 318 species of birds found in Turkey in Europe by the authors in the spring of 1869, including species mentioned by other writers on the Birds of Turkey prior to the compilation of the present list. Notes relating to the habits, economy, and distribution, as well as with reference to nomenclature, are added, and also a list of papers previously published on the same subject (p. 60). To the latter, Dr. Finsch's article (J. f. Orn. 1859, p. 378) must be added, wherein five species, not included in this list, are mentioned (see note, p. 341).

Ernst, A.

Apuntos para la fauna Ornithologica de Venezuela. Vargasia, 1870, pp. 195–198, cum tab.

A translation of Messrs. Sclater and Salvin's papers in the Proc. Zool. Soc. (1868, pp. 165, 626, and 1869, p. 250) on the Birds of Venezuela collected by Anton.Goering. The plate represents *Brachygalba goeringi, Sublegatus glaber,* and *Euscarthmus impiger,* the drawings being taken by Mr. Goering from the plates accompanying the above-mentioned papers.

Fatio, V.

*Supplément à la liste des divers représentants de l'*Alca impennis *en Europe.* Bull. Soc. Orn. Suisse, ii. pp. 147–157.

M. Fatio here reprints, with a short prefatory notice, Prof. Newton's supplementary record of the remains of *Alca impennis*, which has already appeared in this Journal (Ibis, 1870, p. 256).

Feilden, H. W.

Letter from. Ibis, 1870, p. 295.

Additional information regarding the breeding of *Himantopus candidus* is here given.

Fickert, C.

Notiz über Sylvia locustella, *Lath.* J. für Orn. 1870, p. 439.

Finsch, Dr. O.

1. *Ueber die Vögel Neu-Seelands.* J. für Orn. 1870, pp. 241–256, 321–377.

Dr. Finsch in this important paper enumerates 155 species of birds as inhabiting New Zealand, its adjoining islands and shores. References are given to the works of Gray, Hutton, and Buller, and other writers on New-Zealand ornithology. No new species are described; but a number of notes on the nomenclature of many of the species are given, and measurements taken from specimens sent to the author by Dr. Julius Haast.

2. *R. B. Sharpe's Monographie der* Alcedinidæ. J. für Orn. 1870, pp. 377–380.

A short review of this work. See Sharpe.

3. *Description of a New Species of Penguin.* P. Z. S. 1870, p. 322, plate xxv.

The species here described is called *Dasyrhamphus herculis*. The specimen is contained in the collection of Count Turati, of Milan. The exact locality whence it was procured is not known.

4. *On a Collection of Birds from the Island of Trinidad.* P. Z. S. 1870, pp. 552–589.

115 species are enumerated in the list of this collection, but notes of many others are given. The paper will be found a very useful supplement to Léotaud's 'Oiseaux de la Trinidad.' The whole number of birds found in this island Dr. Finsch

computes at about 350 species, of which one only (*Psittacula cingulata*) is peculiar!

5. *Ueber eine Vögelsammlung aus Nordwest-Mexico.* Abh. nat. Ver. zu Bremen, 1870, pp. 322–363.

The greater part of the 44 species included in this collection were obtained by the late Col. J. A. Grayson near Mazatlan, and on the Tres Marias Islands. In his preface Dr. Finsch enumerates a list of 26 papers on Mexican Birds published in various periodicals and other works, showing how scattered is the information concerning the birds of this region. We notice in this collection several very interesting species (rediscoveries we might almost call them), such as *Trogon citreolus, Pheucticus chrysopeplus,* and *Psittacula cyanopyga.* Others, of great rarity, are mentioned; and one species, *Calocitta elegans,* is described as new. Different as this bird appears to be from *C. colliei,* we still think the suggestion thrown out by Salvin, as quoted by Dr. Finsch, may possibly be correct, and that, not laying too much stress upon the determination of the sexes, these two supposed species may prove to be opposite sexes of one and the same. There is a valuable notice of *Otocoris alpestris,* showing that this name must be applied to the American bird, supposing it to differ from the European, a view not held by Dr. Finsch. All the species of *Otocoris,* five in number, are also enumerated, and their synonymy and distribution given.

6. *Neue Art der Gattung* Ptilotis. Abh. nat. Ver. zu Bremen, 1870, p. 364.

The species here described is called *P. argentauris.* It is from New Guinea or Waigiou.

7. *On a Collection of Birds from North-Eastern Abyssinia and the Bogos Country, with Notes by the collector, William Jesse, C.M.Z.S., Zoologist to the Abyssinian Expedition.* Trans. Zool. Soc. vii. pp. 197–331, plates xxiii.–xxvii. Read June 10, 1869; published May 1870.

The ornithological results of Mr. Jesse's expedition with the army to Abyssinia. 221 species of birds are enumerated, of which two are described as new, viz. *Alæmon jessii,* and *Lanius fallax.* An appendix contains Mr. Jesse's Report to the Council of the Zoological Society upon his proceedings in connexion with the Abyssinian Expedition. And a second appendix contains supplemental remarks on the birds collected by Mr. Jesse. These were suggested by von Heuglin's 'Ornithology of North-east Africa,' now publishing, and Mr. Blanford's 'Geology and Zoology of Abyssinia.' . A list is given of the birds obtained by the latter naturalist not included in Mr. Jesse's series. There are also some critical remarks on the determination of some of the species mentioned in Mr. Blanford's book. Plates of the following four birds accompany this paper, viz. *Caprimulgus inornatus, Lanius fallax, Coraphites melanauchen,* and *Larus hemprichii.* There is also a map showing Mr. Jesse's route and collecting-stations.

FINSCH, Dr. O., und HARTLAUB, Dr. G.

1. *Die Vögel Ost-Afrika's.* Leipzig u. Heidelberg, 1870. 1 vol. 8vo, pp. 898, tabb. 11.

This highly elaborate ornithological work forms the fourth volume of Baron C. C. v. d. Decken's 'Reisen in Ost-Afrika,' published by the mother of the unfortunate traveller as a memorial of her son. It contains a complete treatise on the birds of Eastern Africa, from Cape Guardafui to Southern Mozambique. The species which have been met with within these limits are 457 in number, of each of which full synonymy, an accurate diagnosis, and abundant general details are given. Many notes and observations about allied species are intercalated. *Erythropus amurensis,* Gurney, is renamed *Falco raddei* (p. 74). New species described are *Caprimulgus inornatus* (p. 120), *Hirundo domicella* (p. 143), *Drymoica elegans* et *D. lais* (p. 237), *D. rufilata* (p. 238), *Saxicola frenata* et *S. heuglini* (p. 258–9), *Anthus crenatus* (p. 275), *Muscicapa cinereola* (p. 302), *Erythrocercus livingstonei* (p. 303), *Lanius hemileucurus* (p. 329), *Telephonus remigialis* (p. 340), *Laniarius sticturus* (p. 342), *L. salimæ* (p. 349), *Sycobrotus kersteni* (p. 404), *Turtur damarensis* (p. 550), and *Numida cornuta* (p. 569). A new genus, *Dryodromas,* is instituted (p. 239) for *Sylvia fulvicapilla,* Vieill., and its allies; and another, *Nicator* (p. 360) for *Lanius chloris,* Val. (=*Laniarius peli,* Bp.), and *Nicator gularis,* sp. n.; and the term *Defilippia* of Salvadori is proposed to be altered into *Limnetes* (p. 640). Eleven plates illustrate the following species of birds:—*Falco concolor* (frontispiece), *Caprimulgus fossii*, *Nectarinia jardinii* and *N. erythrocerca*, *Andropadus flavescens*, *Bias musicus*, *Muscicapa cinereola*, *Laniarius funebris*, *L. sticturus*, *L. orientalis*, *L. salimæ*, *Symplectes kersteni*, *Pionias fuscicapillus*, *Corythaix livingstonii*, *Francolinus cranchii*, *F. kirki*, and *Hydrochelidon albigena*.

2. *Zur Ornithologie der Tonga-Inseln.* J. für Orn. 1870, pp. 119–140, t. iv.

In the Proceedings of the Zoological Society for 1869 (p. 544), the authors described a small collection of birds from these islands made by Dr. Gräffe. The present paper combines these notes with others on a second collection from the same source. A list of 37 species is given as found in this group of islands; and the authority for the occurrence of each is added. Copious notes on eighteen species are given, and *Myiolestes heinii* is figured.

FISCHER, JOH. VON.

Die Vögel des St. Petersburger Gouvernements. Zool. Gart. 1870, p. 344.

Short notes on birds observed by the author during fifteen months' study of the ornis of the district near St. Petersburg.

FRAAS, OSCAR.

Die Fauna von Steinheim. Württ. nat. Jahresh. 1870, pp. 272–288, t. vii.–xiii.

The fossil remains of eight species of birds are here described from specimens obtained from the Miocene formations at Steinheim.

Anas atava (t. xiii. figs. 1, *a*, *b*, *c*), *A. cygniformis* (t. xiii. f. 2, *a*, *b*), *Pelecanus intermedius* (t. xiii. figs. 3, 4), *Ardea similis* (t. vii. f. 14, *a*, *b*, *c*), *Palælodus steinheimensis* (t. vii. f. 13), are described as new; and bones of *Anas blanchardi*, A. Milne-Edw., *Ibis pagana*, A. Milne-Edw., and *Palælodus gracilipes*, A. Milne-Edw., are also described.

FRAUENFELD, GEORG, R. VON.

Ueber den Werth der Vögel in Bezug auf das Vogelschutzgesetz. Blätt. d. Vereins. f. Landeskunde in Niederösterreich.

An essay upon the question what species should be included in the proposed laws for the preservation of bird-life in the Austrian Empire.

GEOFFROY ST.-HILAIRE, A.

Note sur quelques reproductions d'oiseaux obtenues en 1868 et 1869 *au Jardin d'Acclimatation du Bois de Boulogne.* Bull. Soc. Acclim. ser. 2, p. 127.

Contains notes on the reproduction of *Phasianus reevesii, Euplocamus swinhoii, E. prælatus, E. nobilis, E. vieilloti, Polyplectron bicalcaratum, Penelope pipile, Aramides cayennensis,* and other well-known species, in the Jardin d'Acclimatation.

GIGLIOLI, H. H., and SALVADORI, T.

1. *On some other new and little-known Birds collected during the Voyage round the World in* 1865–68 *of H.I.M.'s S. 'Magenta.'* Ibis, 1870, p. 185.

Apparently a translation of the following paper, though perhaps anterior to it in date of publication.

2. *Altre nuove o poco note specie di uccelli raccolte durante il viaggio fatto intorno al mondo dalla Pirocorvetta italiana Magenta.* Atti Ac. Torino, 1870, pp. 273–276.

Acridotheres leucocephalus is described as a new species from Cochin China. *Leptoptila chlorauchenia* is proposed for a Pigeon from Uruguay. It is probably the *Paloma parda tapadas roxas* of Azara, and doubtless *Leptoptila chalcauchenia,* Salvad., MS., of Sclater and Salvin, P. Z. S., 1869, p. 633. It is also *Leptoptila ochroptera* of v. Pelzeln, Orn. Bras. p. 278 (1870). *Rhopophilus* is a new generic name proposed for *Drymœca* ? *pekinensis,* Swinh., and its natural position indicated to be near *Laniellus* in the Timaliidæ.

GILLETT, GEORGE.

On the Birds of Novaya Zemlya. Ibis, 1870, pp. 303–310.

Twenty-eight species are enumerated in this paper, which includes all that the author saw between 17th July and 5th September. The names of the majority of the species are given without hesitation; but some are only included with doubt. A note appended to this paper gives a comparison of the results obtained by the author and Dr. von Baer. It appears that the latter explorer mentions six additional species, of which one is doubtful. The bird-fauna of this desolate region thus consists of thirty-three or thirty-four species.

GIRTANNER, Dr. A.

Beitrag zur Naturgeschichte des Bartgeiers der Central-Alpenkette (Gypaetus alpinus, Alpen-Bartgeier). Ber. St. Gall. naturw. Gesell. 1870, pp. 147–207.

A very full account of this species as observed in the Swiss Alps.

GÖBEL, H.

1. *Ein Ausflug an die Djepermündung vom* 28. bis 31. Mai 1869. J. für Orn. 1870, pp. 141–144.

Contains notes on a number of birds of Southern Russia.

2. *Die in Jahren* 1867, 1868, *und* 1869 *im Umanschen Kreise (Gouvernement Kiew) beobachteten Vögel.* J. für. Orn. 1870, pp. 177–203, 440–456.

Contains notes on a number of species of South-Russian birds, their migrations, &c. The nest and eggs of many species are also fully described.

3. *Ueber* Podiceps widhalmi, *nov. spec.* J. für Orn. 1870, p. 312–315.

This supposed new species was found near the mouth of the Dnieper. It is allied to *P. cristatus.*

GODMAN, F. DU CANE.

Natural History of the Azores or Western Islands. London: 1870. 8vo, pp. 358, two maps.

The Ornithological portion of this work occupies from page 18 to page 43, and is a reprint, with alterations, of the author's paper published in this Journal (Ibis, 1866, pp. 88 *et seq.*). *Fringilla moreleti* is here considered a synonym of *F. tintillon*; and *Serinus hortulanus* of the former paper is now identified with the Wild Canary, *S. canarius.* A table shows the distribution of Azorean birds with reference to the other Atlantic Islands and Europe. At the end of the volume will be found some general remarks stating the author's views as to the mode in which these islands have been peopled with organic life, which are of a suggestive character, and of interest to all occupied with similar phases of the more speculative branch of our science.

GODWIN-AUSTEN, Major H.

1. *A List of Birds obtained in the Khasi and North Cachar Hills.* J. A. S. B. 1870, pt. ii. p. 91.

A list of 207 species obtained in this hitherto unexplored district, accompanied by many useful remarks. The nomenclature and classification are from Dr. Jerdon's 'Birds of India;' and Dr. Jerdon has determined the doubtful species. Species newly described are *Pomatorhinus m'clellandi,* Jerdon, and *Trochalopteron austeni,* Jerdon.

2. *Second List of Birds obtained in the Khasi and North Cachar Hill-ranges, including the Garo Hills and country at their base, in the Mymensing and Sylhet district.* J. A. S. B. 1870, pt. ii. p. 264.

A supplementary paper to the last mentioned, containing results of the collecting-seasons of 1869–70. It includes notices of 148 species, principally from the southern base of the Khasi and Garo Hills, and from the Garo Hills themselves. Rare species met with were *Turdinus brevicaudatus,* Blyth, and *Garrulax gularis,* McLelland. Others, undetermined, are reserved for subsequent examination.

GOULD, JOHN.

1. *The Birds of Asia.* Part xxii. London: 1870.

The customary yearly part of this great work of Mr. Gould's bears the date March 1st, 1870. The subjects figured are:—*Alcedo grandis, Sturnus purpurascens, Scops pennatus, Athene brodiei, Syrnium ocellatum, Phodilus badius, Crossoptilon auritum, Polyplectron bicalcaratum, Euspiza melanocephala, E. luteola, Emberiza cinerea, Megalæma franklini, Vivia innominata, Sasia ochracea, S. abnormis, Rimator malacoptilus.* Some of these species are from the most distant parts of the continent of Asia and the adjoining islands, and some from Asia Minor.

2. *The Birds of Great Britain.* Parts xvii., xviii. London: 1870.

Mr. Gould keeps making steady progress in this work. The two parts issued in 1870 include plates of the following species:—*Corvus cornix, Aquila nævia, Pandion haliaetus, Aedon galactodes, Emberiza pusilla, Somateria mollissima, S. spectabilis,* *Harelda glacialis, Podiceps auritus, Pagophila eburnea, Actodromas minuta, Leimonites temmincki, Acrocephalus turdoides, Nycticorax griseus, Puffinus major, Columba livia, Turtur auritus, Corvus corone, Otocorys alpestris, Serinus hortulanus, Glareola pratincola, Hæmatopus ostralegus, Bernicla brenta, B. ruficollis, Himantopus candidus, Limnocinclus pectoralis, Tryngites rufescens, Limicola pygmæa, Herodias garzetta,* and *Procellaria glacialis.* Though not responsible for the actual coinage of many of the generic names quoted above, Mr. Gould seems only too ready to make them pass current. We believe that it would not be possible to indicate any precise characters by which several of the above-mentioned genera may be distinguished.

3. *Remarks on a collection of Humming-birds, made by Mr. Buckley in Ecuador, and descriptions of two new species.* P. Z. S. 1870, p. 803.

A list of thirty species of Humming-birds, collected by Mr. Buckley, is given. The new species described are called *Thalurania hypochlora* and *Chætocercus bombus.*

4. *Description of a supposed new species of Pigeon.* Ann. & Mag. N. H. ser. 4, vol. v. p. 62 (1870).

A new generic name, *Otidiphaps,* is proposed for a singular Pigeon, supposed to be from "one of the islands of the Eastern Archipelago or New Guinea," and the species is called *O. nobilis.* Though the bill is stated to be longer than the head, straight and Plover-like, and not toothed, Mr. Gould expresses his opinion that this form is allied to *Didunculus* (*cf.* P. Z. S. 1870, p. 4).

5. *Description of a new species of* Seisura. Ann. N. H. ser. 4, vol. vi. p. 224 (1870).

The species here described is called *Seisura nana;* it is from Northern Australia.

5. *On a supposed new species of Humming-bird from the Juan-Fernandez group of Islands.* Ann. N. H. ser. 4, vol. vi. p. 406 (1870).

The species here described is called *Eustephanus leyboldi,* specimens having been procured by Mr. Leybold of Santiago, Chili, from the little island of Mas-afuera (*cf.* Sclater, *anteà,* p. 178 *et seq.*).

GRÄFFE, EDUARD.

Ornithologische Mittheilungen aus Central-Polynesien. I. *Die Vogelwelt der Tonga-Inseln.* J. für Orn. pp. 401–420.

A note by Drs. Finsch & Hartlaub prefaces this paper, which is from the pen of the collector who furnished them with the materials for their article on the birds of these islands. The habits &c. of many of the species are fully related, and their native names recorded. A note on *Megapodius burnabyi*, Gray, by Dr. Finsch, concludes the paper (see Finsch & Hartlaub).

GRANDIDIER, ALFRED.

Description de quelques animaux nouveaux découverts à Madagascar en novembre 1869. Rev. Zool. 1870, p. 49.

Contains a description (p. 50) of *Bernieria crossleyi* (*cf.* Sharpe, P. Z. S. 1870, p. 392).

GRAY, GEORGE ROBERT.

1. *Hand-list of Genera and Species of Birds, distinguishing those contained in the British Museum.* Part ii. Conirostres, Scansores, Columbæ, and Gallinæ. London : 1870. 8vo, pp. 278.

The first part of this important work has already been noticed in these pages (Ibis, 1870, p. 116). The second part brings Mr. Gray to the end of the Gallinæ of his arrangement, leaving a comparatively small portion to complete his task*. 2457 genera and subgenera are recorded up to the end of this volume, comprising 9840 nominal species. As we believe it has, in very many instances, been Mr. Gray's object to record the opinions of others rather than his own as regards the validity of many of the species to which specific rank is here conceded, this large total will doubtless be considerably reduced. It will be ever a matter of regret to working ornithologists that Mr. Gray has omitted to add references to the works where the genera, species, and synonyms are published, in addition to the references to plates. We venture to say that, useful as the work is in its present form, with this addition its utility would have been trebled. In an undertaking of similar scope, Von Harold and Gemminger's 'Catalogus Coleopterorum,' this has been done, giving the work vastly increased utility. Still, notwithstanding this serious omission, Mr. Gray has done excellent service in this laborious undertaking.

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* Since accomplished with the addition of an admirable index.

2. *Descriptions of New Species of Birds from the Solomon and Banks's Groups of Islands.* Ann. N. H. ser. 4, vol. v. p. 327 (1870).

The species here described were collected by Mr. Julius Brenchley, during a visit to various islands in the Pacific Ocean. They are as follows:—*Accipiter albogularis, Philemon sclateri, Ptilonopus solomonensis, Carpophaga brenchleyi,* all from San Cristoval I., *Megapodius brenchleyi,* from Gulf Island. These islands belong to the Solomon group. A list of seven species, not included Mr. Sclater's list of the birds of the Solomons (P. Z. S. 1869, in p. 118) is given. Two species of birds from Vanua Levu, one of the islands of the Banks's group, are then described as *Lalage banksiana* and *Rhipidura spilodera,* along with which two known species were procured. A note on *Megapodius brazieri* is added; and mention is made of the existence of birds of this genus in the New Hebrides and also on Tanna and the Sandwich Islands. Lastly, *Glyciphila flavotincta* is described from the New Hebrides.

GRAY, ROBERT.

Letter from. Ibis, 1870, p. 291.

The occurrence of *Astur atricapillus* and *Totanus chloropygius* in Scotland is mentioned.

GREY, Sir G.

Letter from. P. Z. S. 1870, p. 116.

A letter referring to Dr. Haast's communication respecting the discovery of *Dinornis* bones, wherein the opinion is expressed that the Moa was found living by the ancestors of the present New-Zealand race.

GURNEY, J. H.

1. *Letter from.* Ibis, 1870, p. 150.

On the probable identity of a South-African Heron with *Ardea idæ* of Madagascar, and on the difference between *Butorides atricapilla* and *B. javanica,* as shown by specimens in the Leyden Museum.

2. *Letter from.* Ibis, 1870, p. 445.

An undetermined Harrier from the Philippine Islands is stated to be the young of *Circus melanoleucus.*

3. *Letter from.* Ibis, 1870, p. 534.

On *Hieracidea novæ-zelandiæ* and *H. brunnea* and their supposed identity, on *Falco subniger* and *Milvus isurus* and the reasons why they were stated to occur in New Zealand, and on the identity of *Circus gouldi* and *C. assimilis.*

Haast, J.

Letter from. P. Z. S. 1870, p. 53.

A letter to Prof. Owen, chiefly relating to the situations in which the remains of *Dinornis,* described in Parts xi. and xii. of the Memoirs on *Dinornis* (Trans. Z. S. vi. pp. 495, 497), were found, and to their probable age. Prof. Owen adds some remarks upon the subject of this letter.

Harting, J. E.

1. *Letter from.* Ibis, 1870, p. 151.

States the occurrence of *Tringa bairdi* at Walvisch Bay, S. Africa.

2. *On rare or little-known* Limicolæ. Ibis, 1870, pp. 201–213, plates v. vi.

This is a continuation of papers on the same subject (Ibis, 1869, p. 434). The species treated in the present article are, according to the author's determination, *Eudromias asiaticus* (Pall.), and *E. veredus* (Gould). Both species are figured.

3. *On rare or little-known* Limicolæ. Ibis, 1870, pp. 378–392, plate xi.

Two species, *Ægialitis geoffroyi* and *Æ. mongolica,* are fully investigated in this paper, as to their nomenclature, range, and habits. A plate of the former is given.

Hartlaub, Dr. G.

1. *Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres* 1869. Wiegm. Arch. 1870, pt. ii. pp. 1–44.

This is, we believe, Dr. Hartlaub's twenty-fourth Report on the Progress of Ornithological Science, and gives, as its precursors have in former years, a concise abstract of all that has taken place during the year 1869.

2. *Letter from.* Ibis, 1870, p. 443.

States that *Nectarinia fantensis,* Sharpe, = *N. phæothorax,* Hartl., and *Numida verreauxi,* Elliot, = *N. eduardi.*

Hartlaub, G., and Finsch, O.

On Lobiospiza notabilis, *a remarkable new Finch from the Navigator's Islands.* P. Z. S. 1870, p. 817, pl. xlix.

A new generic name, *Lobiospiza,* is proposed for this singular bird, of which a full description is given under the name *L. notabilis.*

Hawkins, Herbert S.

Letter from. Ibis, 1870, p. 298.

Relates to the breeding of *Nyctea nivea* in Labrador.

Heck, R.

Zur Verhütung des chronischen Magenkatarrh's bei Stuben-Vögeln. J. für Orn. 1870, p. 392.

A prescription for this disease.

Helm, Max.

See Cabanis.

Heuglin, Theodor von.

1. *Ornithologie Nordost-Afrika's, der Nilquellen- und Küsten-Gebiete des Rothen Meeres und des nördlichen Somal-Landes.* Lieff. 12–13, 14–15, and 16–17.

The twelfth livraison commences the second part of the first volume of this important work. The six livraisons issued in 1870 contain the families Ampelidæ, Muscicapidæ, Laniidæ, Corvidæ, Sturnidæ, and the greater part of the Fringillidæ. Figures are given of the following species :—

XIX. *a.*	Hyphantica hæmatocephala.	XI.	Eremomela grisea.
XXII.	Geocoraphus modestus.	VII.	Atticora griseopyga.
X.	Tricholais elegans.	XXV. *b.*	Schizorhis personatus.

2. *Einige Noten zu L. Taczanowski's Uebersicht der Vögel Algeriens.* J. für Orn. 1870, pp. 383–385.

Contains some emendations of synonymy, and suggestions with reference to the article commented on. See Taczanowski.

HILL, EDWARD S.

Lord Howe's Island. Sydney: 1870.

This pamphlet relates to a visit to this island by H.M.S. 'Thetis,' conveying a Commissioner to investigate a case of homicide committed on the island. In describing excursions into the interior of the island, mention is frequently made of the birds seen. At the end of the pamphlet, a list of fourteen species, as determined by the Curator of the Sydney Museum, is given, most of which, however, are not specifically named. The "Wood-hen," which received special notice, has since been described as *Ocydromus sylvestris* (Scl. P. Z. S. 1869, p. 472, t. xxxv.). Mention is also made of a white bird like a Guinea-fowl, which, if not actually extinct, seems on a fair way to become so*. Those eradicators of island faunas and floras, Pigs, Cats, and Goats, appear to abound (*cf.* P. Z. S. 1869, p. 471).

HOCKER, PASTOR J.

1. *Ueber die Bastardirung der Vögel.* J. für Orn. 1870, p. 152.

Describes hybrids between *Pavo cristatus* and *Numida meleagris.*

2. *Ueber den Nistort des Waldkauzes,* Strix aluco. J. für Orn. 1870, pp. 315–317.

3. *Ueber das Abändern der Eier.* J. für Orn. 1870, p. 397.

Notes abnormal varieties amongst the eggs of several species of birds.

HOLTZ, LUDWIG.

Beschreibung südamerikanischer Vögel-Eier. J. für Orn. 1870, pp. 1–24, t. i.

This paper is published as a supplement to the articles on the Birds of Buenos Ayres by Chrysanthus Sternberg (J. f.

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* This bird is very probably the same as the species from Norfolk Island, described by Latham as *Gallinula alba* (Ind. Orn. p. 768, et Gen. Hist. ix. p. 428), the type of which is now in the Imperial Cabinet at Vienna (*cf.* v. Pelz. Sitz. Ak. Wien, xli. p. 328). Von Pelzeln has no doubts as to the distinctness of this bird as a species, and considers that it should be referred to the genus *Notornis* rather than to *Porphyrio,* in which view he is probably correct.

Orn. 1869, pp. 125–135, 174–193, 257–278). The eggs of 46 species are fully described, and those of *Molobrus sericeus* and *M. badius* are figured. Several of the eggs described belong to interesting S. American forms, that of *Palamedea chavaria* being worthy of special notice.

HOMEYER, ALEX. von.

1. *Dr. Anton Fritsch. Die Naturgeschichte der Vögel Europa's.* J. für Orn. 1870, pp. 150–152.

A review of Dr. Fritsch's work.

2. *Zusätze und Berichtigungen zu Dr. Bernhard Borggreve's Werk, "Vogel-Fauna von Nord-Deutschland."* J. für Orn. 1870, pp. 214–231.

Dr. Borggreve's work has soon produced a crop of additions and corrections. Notes on 90 species are here given.

HOMEYER, EUG. F. v.

Beiträge zur Kenntniss der Vögel Ostsibiriens und des Amurlandes. (Fortsetzung: Jahrg. 1869, S. 169–174.) J. für Orn. 1870, pp. 56–64, 161–176, 421–439.

The papers on this subject commenced in 1868, and continued in 1869, are here brought to a conclusion. 322 species are mentioned in all, of which 203 come into the present volume. These papers will be found extremely useful, being a complete digest of the works of v. Middendorff, v. Schrenk, and Radde (*cf.* Zool. Rec. v. p. 41, & vi. p. 35).

HORNE, C.

Letter from. Ibis, 1870, p. 294.

Describes the nesting of *Mycteria australis.*

HUDSON, W. H.

Letters on the Ornithology of Buenos Ayres. P. Z. S. 1870, pp. 87, 112, 158, 332, 545, 671, 748, 798.

These letters contain excellent observations on the ornithology of Buenos Ayres, where Mr. Hudson has resided some years.

HUME, ALLAN.

1. *My Scrap-Book, or Rough Notes on Indian Oology and Ornithology.* Part i. Raptores. No. 2, Calcutta, 1870: 8vo. pp. 238–422.

In this number Mr. Hume continues his notes on Indian Raptores. As in the former number, full descriptions of most of the species mentioned, together with their measurements, are given, and copious extracts from various authorities as to their habits &c. *Milvus major,* briefly described in this Journal, 1870, p. 438, is here fully characterized. So also is *Ephialtes plumipes* (referred by Jerdon to *E. semitorques,* Bp., *anteà,* p. 348). The *Haliaetus* doubtfully named *H. pelagicus* in the 'The Ibis' and in this volume, with the suggestion that, if new, it should be called *H. brooksi,* turns out to be *H. albicilla* (*cf.* Jerdon *l. c.* and Hume *anteà,* p. 404).

2. *Letter from.* Ibis, 1870, pp. 136–145.

Contains remarks on the breeding-habits of several Indian birds, with descriptions of their eggs. There are also notes on some Indian birds belonging to the genera *Chelidorhynx, Munia, Hydrobata, Corvus, Lanius, Budytes, Parus, Phœnicopterus, Saxicola,* and descriptions of the following new species: —*Phylloscopus neglectus, Niltava leucotis**, and *Prinia humilis.*

3. *Letter from.* Ibis, 1870, p. 145.

Description of the breeding of the Indian Black-winged Stilt (*Himantopus candidus*).

4. *Stray notes on Ornithology in India.* Ibis, 1870, pp. 181–185, 399–407.

Jerdonia, a new genus of Sylviidæ, is proposed for a new species, *Jerdonia agricolensis* (qu. *agricola*). The second portion gives a full account of *Emberiza striolata,* its habits, breeding, and eggs.

5. *Letter from.* Ibis, 1870, pp. 283–288.

Contains notes on Indian species of the genera *Saxicola* and *Anthus.* A new species, *Corydalla griseorufescens,* is described.

6. *Letter from.* Ibis, 1870, pp. 435–438.

Contains some notes on a collection of birds made in Tipperah. *Arachnecthra intermedia* is described as a new species; and the occurrence of *Daption capensis* between Ceylon and the mainland is mentioned.

[* Qu. Avis arte facta, corpus *Niltavæ sundaræ,* caput *Pari cinerei,* W. E. Brooks in litt.—Ed.]

7. *Letter from.* Ibis, 1870, p. 438.

The provisional name (whatever that may mean) of *Haliaetus brooksi* is suggested for an Eagle, doubtfully referred to *H. albicilla.* Notice is also given of the intended separation of a Kite as *Milvus major,* and of an Owl as *Ephialtes plumipes,* in the forthcoming second part of 'Rough Notes' (see Hume, *anteà,* No. 1).

8. *Letter from.* Ibis, 1870, pp. 528–529.

Refers to a Swan killed in the neighbourhood of Peshawar. A supposed new *Indicator* is described as *I. radcliffii.* The rest of the letter refers to species of the genera *Hodgsonius, Sturnus, Picus, Passer, Ruticilla,* and *Ammomanes.*

9. *Letter from.* Ibis, 1870, pp. 530–532.

On the habitat of *Ruticilla rufigularis,* the breeding of *Himantopus candidus,* of *Reguloides superciliosus,* and on the occurrence *Alauda pispoletta* in the plains of India.

10. *Letter from.* Ibis, 1870, p. 532.

On the identity of *Cypselus tectorum,* Jerd., with *C. infumatus,* Sclater. It is also the same as *C. tinus,* Swinh. (*v. anteà,* p. 355).

11. *Additional Observations regarding some species of Birds noticed by Mr. W. T. Blanford in his ornithological notes, from Southern, Western, and Central India.* J. A. S. B. 1870, pt. ii. p. 113.

Gives remarks on species noticed in Mr. Blanford's paper, J. A. S. B. 1869, pt. ii. The North-Indian representative of *Spizalauda deva* is described, and named *S. simillima* (p. 120). *Alcippe brucei* is said not to be distinguishable from *A. poiocephala.* Mr. Hume has specimens of the supposed rarity *Salpornis spilonotus* from Oudh, the north of the Saharunpúr district, and other localities.

12. *Letter on certain Birds.* Proc. A. S. B. 1870, p. 265.

Remarks on some of the species of birds contained in Major Godwin-Austen's paper, J. A. S. B. 1870, pt. ii. p. 91.

HUTTON, Capt. F. W.

1. *Description of two Birds new to the Fauna of New Zealand.* Trans. N. Zeal. Inst. 1870, pp. 78–80.

The two species here described as inhabitants of New Zealand are *Nyroca australis,* Gould, and *Æstrelata gouldi,* a new species of Procellariidæ. It is the *Procellaria macroptera* of Gould, but not of A. Smith.

2. *On the introduction of the Pheasant into the Province of Auckland.* Trans. N. Zeal. Inst. 1870, p. 80.

Pheasants (*Phasianus torquatus*) were first turned out in New Zealand in 1851, and others in 1856. They are now extremely abundant from Auckland southwards. English Pheasants (*P. colchicus*), though they have multiplied freely at Mongonui, have not spread much. Two brace of *Ortyx californicus* were turned out in 1862. This species now exists in thousands, and has spread over many miles.

3. *Notes on some of the Birds inhabiting the Province of Auckland, New Zealand.* Ibis, 1870, pp. 392–398.

These notes relate to the habits, nesting and eggs, measurements and characters of a number of New-Zealand birds. A list of birds which have been introduced into the province, and which have bred in a wild state, is added. This includes a number of well-known European species. Then follows a list of species which have been liberated but which have not yet bred. Finally, a list of other indigenous species is given, which are known to be found in the province, but which are not otherwise mentioned in his present notes.

IM THURN, EVERARD.

Birds of Marlborough, being a contribution to the Ornithology of the District. Marlborough and London: 1870. 12mo, pp. 117.

Cf. Ibis, 1870, p. 509.

JERDON, T. C.

1. *Letter from.* Ibis, 1870, p. 147.

Description of *Lophophorus sclateri.*

2. *Notes on some new Species of Birds from the N.-East frontier of India.* Proc. A. S. B. 1870, p. 59.

Contains the original descriptions of *Ceriornis blythi, Lophophorus sclateri* from Upper Assam, and *Cypselus tectorum,* from North Cachar and the Garrow Hills. Concerning the two former, see Sclater, P. Z. S. 1870, p. 162.

JOBERT, M.

Observations on the Nasal Glands of Birds. Ann. N. H. ser. 4, vol. v. p. 70 (1870).

An extract of a paper published in the 'Comptes Rendus' for Nov. 1869, lxix. p. 1016.

KOCH, GOTTLIEB V.

Ornithologische Notizen aus dem Jahre 1869. J. für Orn. 1870, pp. 393, 394.

Contains a few notes on European birds.

KÖNIG-WARTHAUSEN, BARON, R.

Historische Notiz über einen sprechenden Staar und die rothen Rebhühner auf Rhodus. J. für Orn. 1870, pp. 65–66.

The first of these extracts is taken from the travels and captivity in 1582 of Hans Ulrich Krafft, a native of Ulm. The second describes the 'Rebhühner' of Rhodes (a species, accord-to Cabanis, allied to *Perdix saxatilis* or *P. græca*), as observed by Samuel Kiechel, also of Ulm, between the years 1585 and 1589.

KRIEGER, O. VON.

Briefliche Mittheilung über Buteo tachardus *und* Milvus ater, *in Thüringen erlegt.* J. für Orn. 1870, pp. 176, 177.

KUWERT, A.

Ornithologische Notizen. J. für Orn. 1870, pp. 203–206.

Contains notes on some birds of East Prussia.

LAYARD, E. L.

1. *Letter from.* Ibis, 1870, p. 282.

Relates to the occurrence of certain birds in South Africa. Mr. Layard complains of the want of definition regarding the term "Caffreland," as used by Wahlberg.

2. *Letter from.* Ibis, 1870, p. 443.

On the occurrence of *Calherodias cucullatus*, and *Ardea leuconota* in South Africa.

3. *Note on the* "Tchagra" *of Le Vaillant.* Ibis, 1870, pp. 460–462.

The "Tchagra" of Le Vaillant is identified with *Telephonus longirostris*, Swains., and as distinct from *Telephonus* (*Lanius*) *erythropterus*, Linn.

LEGGE, W. VINCENT.

Notes on a Malurine Bird from Ceylon. P. Z. S. 1870, p. 673.

The species here referred to is not named, but is said to be allied to *Prinia socialis.*

LE PRESTRE, DR. F.

Étude sur la reproduction et la domestication de l'Emeu ou Casour de la Nouvelle Hollande. Bull. Soc. Acclim. ser. 2, vii. p. 104.

M. le Prestre gives an account of the breeding of *Dromæus novæ hollandiæ* in 1867 and 1868, in his garden at Caen.

LILFORD, LORD.

Letter from. P. Z. S. 1870, p. 2.

Corrects the locality of a specimen of *Otus capensis,* sent by Major Irby from Gibraltar.

MÄLKIN, F. W.

Hvita varieteter eller s. k. albinos i Universitetets zoologiska Samlingar. Œfvers. Finsk. Vetensk. Förh. 1869-70, pp. 96-101.

Describes albinos of ten species of European birds.

MAGNUS, DR. HUGO.

Untersuchungen über den Bau des knöchernen Vogelkopfes. Zeitschr. f. wiss. Zool. 1870, pp. 1-108.

A very learned and careful disquisition upon the form, position, and development of the various bones which enter into the formation of the skull in the class of birds. Dr. Magnus seems to be well acquainted with recent English literature on this subject. It is perhaps to be regretted that, although the value of some of these bones in classification is clearly pointed out, more practical applications of the characters thus afforded are not given.

MALMGREN, A. J.

Zwei ornithologische Notizen.

1. *Ornithologischer Notizen.*
2. *Die* Anseridæ *Finlands und der skandinavischen Halbinsel.* J. für Orn. 1870, pp. 281-305.

Translations of the author's papers in 'Œfversigt af Finska Vetenskaps Societetens Förhandlingar,' 1869, p. 6, and 'Notiser ur Sällskapets pro Fauna et Flora fennica förhandlingar,' 1869, pp. 389–401, already noticed in these pages (*cf.* Ibis, 1870, p. 132).

3. *Letter from.* Ibis, 1870, p. 148.

Finnish and Scandinavian localities are given for several European birds.

MARCHAND, ARMAND.

Appendice au Catalogue des Oiseaux observés dans le département d'Eure-et-Loire. Rev. Zool. 1870, p. 139.

Gives six additions to the catalogue already published (Rev. Zool. 1868), making the whole number of species observed in these departments 233.

MAREY, E. J.

Sur le mécanisme du vol des Oiseaux. Compt. Rend. lxx. 1870, pp. 1255–1258.

A continuation of the author's former observations on the same subject. In the Smithsonian Report for 1869, just received, will be found a translation of the paper published in the 'Revue des Cours Scientifiques' (*cf.* Ibis, 1870, p. 266).

MARSH, O. C.

Notice of some Fossil Birds from the Cretaceous and Tertiary Formations of the United States. Am. Journ. Sc. 1870, pp. 205–217.

The remains of five species of birds from the Cretaceous formations of New Jersey are recognized and described. They are named as follows:—*Laornis edvardsianus*, a new genus and species allied to the Lamellirostres and Longipennes. A portion of the shaft and distal end of the left tibia is described. Two species of Grallæ are distinguished under the new generic name *Palæotringa* as *P. littoralis* and *P. vetus.* Portions of the left tibiæ are described in each case. The lower half of a left humerus furnishes a description of a new genus and species called *Telmatornis priscus.* It is somewhat allied to the Rails. Another species of the same genus is called *T. affinis*; and a portion of the right humerus is described.

The remains from the Tertiary beds belong to four species; all are ascribed to recent genera, the species being distinct.

The names bestowed on these remains are *Puffinus conradi, Catarractes antiquus, Grus heydeni,* and *Graculus idahensis.*

MARSHALL, C. H. T. and G. F. L.

1. *A Monograph of the* Capitonidæ *or Scansorial Barbets.* London, 1870. Parts I.–V. Plates. 4to.

This work proposes to do for the Capitonidæ what Sharpe's Monograph of the Alcedinidæ is doing, or, rather, at the time we write, has done for that family, and is built upon the same plan. The plates are by Keulemans, and are most of them excellent; and the letterpress, often compiled out of very scanty materials, is as full as circumstances would permit. We notice a good many misprints in the latter, which we trust will be noticed before the work is concluded (*anteà,* p. 162, note). Still we owe a debt of gratitude to the Messrs. Marshall for collecting the literature of this family under one cover, and especially for the plates which so fully illustrate the work. In Part I. we find the following species figured :—*Megalæma virens, M. versicolor, M. henricii, Calorhamphus lathami, Tricholæma hirsuta, Trachyphonus marginatus, Capito maculicoronatus,* and *C. aurovirens.*

Part II. contains illustrations of the following species :—*Pogonorhynchus dubius, Tetragonops frantzii, Xylobucco duchaillui, Trachyphonus cafer, Capito bourcieri, Megalæma lineata, M. hodgsoni,* and *M. flavifrons.*

Part III. *Megalæma zeylanica, M. caniceps, M. nuchalis, M. faber, M. australis, Xantholæma rubricapilla, Stactolæma anchietæ,* and *Pogonorhynchus leucocephalus.*

Part IV. *Megalæma viridis, M. asiatica, M. oorti, M. phaosticta, Trachyphonus goffini, T. purpuratus, T. squamiceps,* and *Barbatula leucotis.*

Part V. *Megalæma chrysopogon, Xantholæma hæmacephala, Capito aurantiicollis, Psilopogon pyrolophus, Calorhamphus fuliginosus, Pogonorhynchus abyssinicus, P. torquatus,* and *P. bidentatus.*

In this part also, owing to the departure of the authors for India, the Preface is published, and also an Introduction, in which the authors' views with respect to the Darwinian hypothesis are entered upon at some length. The history of the family as regards the literature of the subject is then discussed, and a differentiation of the genera and species comprised in the group. This portion of the work concludes with a table of the Geographical Distribution of the Capitonidæ. The manner in which America is divided is not very intelligible, when viewed either as regards the sections or their arrangement in juxtaposition.

2. *Notes on the Classification of the* Capitonidæ. P. Z. S. 1870, p. 117.

The Capitonidæ are here arranged in three subfamilies, the characters of which are given. A new genus, *Stactolæma,* is proposed for *S. anchietæ,* Bocage. Woodcuts illustrate the bills and bristles of *Stactolæma, Barbatula, Xylobucco,* and *Trachyphonus.*

3. *Letter from.* Ibis, 1870, p. 536.

Contains a description of *Megalæma humii,* a supposed new species belonging to the *Capitonidæ* from Borneo.

MARSHALL, W.

Quelques Observations sur la splanchnologie du Rhinochætes jubatus, *Verr. et Desm.* Arch. Néerl. 1870, pp. 402–408.

The author, having examined the internal organs of this bird, arrives at the same general conclusions as Mr. Parker, as to its position in the class Aves (*cf.* Parker, Trans. Z. S. vi. p. 501). A plate illustrates the comparisons instituted.

MARTIN, L.

Das Abändern der Luftröhre beim Auerhahn Tetrao urogallus, *mas.* Zool. Gart. 1870, p. 24.

In some males of *Tetrao urogallus* the windpipe makes a bend between the branches of the furcula instead of going straight to the bronchiæ, something after the fashion of the structure in *Penelope,* &c. Hr. Martin has met with this variation twice among 50 or 60 specimens examined.

MARTIN, PHILIPP LEOPOLD.

Die Praxis der Naturgeschichte. Zweiter Theil, Dermoplastic und Museologie. Weimar: 1870. 8vo, pp. 240, t. i.–vi.

Though but a small portion of this work is devoted especially to ornithology, it appears to contain practical suggestions on what may be called the artistic branch of the science, one which is in a very backward condition in most museums, where alone mounted specimens can and ought to be exhibited to advantage. The plates, most of them referring to mammalia, are drawn with spirit, and show that stuffed specimens, to look natural, must be something more than skins full of tow, and that, to produce a life-like result, the form of every important muscle ought to be carefully studied. A portion of the work relates to cases for the exhibition of specimens and their construction.

MELLISS, JOHN CHARLES.

Notes on the Birds of the Island of St. Helena. Ibis, 1870, p. 97.

A list of the birds of St. Helena, both indigenous and introduced. Of the former, all but one are sea-birds, the single exception being a Plover (*Charadrius pecuarius* of Temm., according to some authors; but whether rightly so determined is perhaps doubtful). Of the latter, a number of cage-birds are mentioned, which have no claim to such distinction. Other introduced species seem to have established themselves in the island.

MILNE-EDWARDS, ALPH.

Observations sur la faune ornithologique du Bourbonnais pendant la période tertiaire moyenne. Compt. Rend. lxx. p. 557 (1870). Translated in Ann. Nat. Hist. ser. 4, vol. v. p. 451.

Shows that the miocene deposits of Saint-Gérard-de-Puy and Langy, which M. Milne-Edwards has recently investigated, contain remains of an almost tropical avifauna of an African type, as indicated by the presence of the genera *Psittacus, Trogon, Collocalia, Pterocles, Leptoptilos,* and *Secretarius.*

MODERSOHN, C.

Der Fang von allerlei Vögeln auf den Reisbaum. J. für Orn. 1870, pp. 394–397.

Details methods for catching birds.

MÖBIUS, K.

Friedrich Boie, Nekrolog. J. für Orn. 1870, pp. 231–233.

An obituary notice of the well-known ornithologist, Friedrich Boie.

MORRELL, G. HERBERT.

The Student's Manual of Comparative Anatomy, and Guide to Dissection, &c. Part ii. Sauropsidæ. Section i. *Aves.* Oxford: 1870. 8vo, pp. 75.

See Ibis, 1870, p. 508.

MÜLLER, PF. KARL.

Aus meinen Beobachtungsnotizen. J. für Orn. 1870, pp. 91–93.

Notes on *Calamoherpe palustris* and *Parus major.*

MURIE, J.

On a Specimen of Aquila barthelemyi *recently living in the Society's Gardens.* P. Z. S. 1870, p. 80.

Refers to a specimen of an Eagle, determined as of this species by Mr. Gurney (Ibis, 1864, p. 339). A letter from Mr. Gurney explains briefly the different phases of plumage passed through by the bird since 1857.

MUTH, J. P.

Die Vögel auf Sicilien. Zool. Gart. 1870, p. 143.

Contains general remarks upon the birds observed in the neighbourhood of Palermo. Hr. Muth calls particular attention to the excellent collection of Sicilian birds formed within these last eight years by Professor Doderlein, Director of the Museum of Palermo for Zoology and Comparative Anatomy, from whose writings many of Hr. Muth's remarks have been selected.

NATHUSIUS, W. von.

Ueber die Eischalen von Æpyornis, Dinornis, Apteryx, *und einigen Crypturiden.* Zeitschr. f. wissensch. Zool. xxi. pp. 330–335, t. xxv., xxvi.

A continuation of H. v. Nathusius's important researches into the structure of the shell of the egg of the Struthiones and other orders of birds. Microscopic examination shows that the egg of *Æpyornis* approaches nearest to that of *Struthio,* and bears no resemblance to that of the larger Raptores, to which some authors have referred this extinct form. The egg of *Dinornis* approaches that of *Rhea,* as already shown in previous articles. The *Tinami* are quite different, as regards the minute structure of their egg-shells, from the true Gallinæ (Phasianidæ and Tetraonidæ). The egg of *Apteryx* in this respect shows certain resemblances to those of the *Tinami*.

NEWTON, ALFRED.

1. *The Record of Zoological Literature.* Vol. vi. *Aves.* London: 8vo, pp. 25–104.

Prof. Newton's share in the 'Record of Zoological Literature' is, we trust, too well known to need any comment here. The part Aves for 1869 appears to be as complete, if not more so, than its predecessors of the five antecedent years.

2. *On existing Remains of the Gare-fowl* (Alca impennis). Ibis, 1870, pp. 257–261.

The extant remains of *Alca impennis* are shown in this paper to be as follows:—

71 or 72 skins; 9 skeletons; detached bones of 38 or 41 different birds; and 65 eggs. (See FATIO.)

3. Ibis, 1870, p. 301.

On the meaning of the name of Grey Lag Goose.

4. Ibis, 1870, p. 448.

Notice of the death of Dr. J. H. Blasius.

5. Ibis, 1870, p. 539.

On the occurrence of *Upupa epops* in Spitsbergen.

6. P. Z. S. 1870, p. 52.

Exhibition of a specimen of *Zonotrichia albicollis* killed in Scotland. Prof. Newton adds an opinion as to the propriety of allowing such accidental stragglers to rank as British birds.

7. P. Z. S. 1870, p. 384.

Expresses the unhesitating opinion that the Falcons from Alaska, called by Messrs. Dall and Bannister *Falco sacer*, are really *F. islandicus*, specimens having been sent him by the Smithsonian Institution for examination.

8. *Exhibition of a Chick of* Anarhynchus frontalis. P. Z. S. 1870, p. 673.

The chick exhibited by Prof. Newton at the Meeting of the Zoological Society, Nov. 1, 1870, showed that the singular curve in the bill of this form is plainly visible in a bird only a few days old.

Niessing, C.

Ornithologisches aus der Mark Brandenberg. J. für Orn. 1870, p. 145.

Noulet, J. B.

Nos deux Hirondelles et leur nids. Compt. Rend. lxxi. p. 78 (1870).

M. Noulet shows that M. Pouchet, in his observations on the Martins' nests at Rouen, had confounded the nests of Swallows and Martins, supposing them to be of one species. See also notice of this paper in Ann. N. H. ser. 4, vol. v. p. 270.

Orton, Prof. James.

The Great Awk. Am. Nat. iii. pp. 539–542.

This short paper contains no fresh information concerning this species, unless it be a short additional note on the occurrence of its remains in shell-heaps scattered along the coast from the British possessions to Massachusetts. An indifferent cut accompanies the paper, copied from Audubon's plate 465.

Owen, Prof. (See Haast, J.)

Parker, W. K.

On the Structure and Development of the Skull of the Common Fowl (Gallus domesticus). Phil. Trans. clix. pp. 755–806, plates lxxxi.–lxxxvii. 1870.

The second of a series of papers which commenced with one on the skull of the Ostrich-tribe (Phil. Trans. 1866, p. 113).

The observations, classed under ten heads, are made upon subjects of ages ranging from the fourth day of incubation to Fowls several years old. Excellent plates illustrate the author's remarks throughout. It would be impossible to give an abstract of this paper, where comparison ranges almost over the whole of the Vertebrata, at least in the downward scale. In his concluding remarks Mr. Parker urges the importance of the various isomorphisms displayed by the skull of this one type in its stages of growth; and, in describing the impressions made upon him by his studies, he adds:—" whilst at work I seemed to myself to have been endeavouring to decipher a *palimpsest,* and one not erased and written upon again just once, but five or six times over. Having erased, as it were, the characters of the gaudy Indian bird, I seemed to be amongst the sombre Grouse; and then, towards incubation, the characters of the Sandgrouse and Hemipod stood out before me. Rubbing these away in my *downward* work, the form of the Tinamou looked one in the face; then the aberrant Ostrich seemed to be described in large archaic characters; a little while, and these faded into what could be just read off as pertaining to the Sea-Turtle, whilst underlying the whole the Fish, in its simplest Myxinoid form, could be traced in morphological hieroglyphics."

To all who wish to become acquainted with the Bird's skull and its complex terminology, this paper will prove of great value.

PELZELN, AUGUST von.

1. *Zur Ornithologie Brasiliens.* Abth. iii., iv. Wien: 1870. 8vo, pp. 189–462.

These parts complete this useful work. Part iii. having been already noticed in these pages (Ibis, 1870, p. 272), it will suffice for us to mention the species described in it as new. They are *Leistes erythrothorax, Euphonia ochrascens, Tachyphonus nattereri, Oryzoborus fringilloides, Spermophila superciliaris, S. caboclinho, S. melanops, S. melanogaster, Haplospiza? crassirostris, Sycalis citrina, Picumnus aurifrons, P. borbæ, P. leucogaster, P. fuscus, Dromococcyx pavoninus, Peristera cyanopis, Leptoptila ochroptera, Leptoptila reichenbachi, Penelope ochrogaster, P. grayi, Crax pinima, and C. mikani.* The fourth and last part contains a complete list of Brazilian birds derived from the best authorities, Prince Neuwied, Spix, Burmeister, and Wallace, Natterer's localities having been given in the previous pages of the work. A number of other authorities are also cited, and a summary given showing that the number of birds recorded as inhabitants of the Empire of Brazil reaches 1680 species. It must be remembered, however, that this large number cannot be regarded as belonging to a single subfauna of the South-American continent, but that, besides the forest region of Eastern Brazil, the territory included covers a large portion of the vast basin of the Amazon, the bird-life of which, in its lower portion at least, is much more Guianan in its character. In the upper portion, too, Amazonia tends to unite with the fauna of the eastern slopes of the Andes rather than with Brazil proper. A short appendix gives a few notes and corrections referring to the earlier portions of the work. An excellent index makes the volume complete; and we congratulate Herr von Pelzeln on bringing to a conclusion a very useful work based upon probably the finest collection of materials ever amassed by a single individual.

2. *Letter from.* Ibis, 1870, p. 296.

Corrects a statement in the 'Record of Zoological Literature' respecting the real author of specific names applied to some species of the genera *Stenopsis* and *Antrostomus.*

PHILIPPI, R.A., and LANDBECK, L.

Catalogo de las Aves Chilenas, existentes en el Museo Nacional de Santiago.

Of this important treatise by the Director and Subdirector of the National Museum of Chili, we have only seen a separate copy. It appeared, we believe, in the 'Añales' of the University of Santiago some years ago. Two hundred and twenty-nine species of Chilian birds are catalogued as valid, and as represented in the national collection; notes of others, obscure or uncertain, are added. An appendix contains many critical remarks upon previous authorities on the birds of Chili, and in particular a full abstract of Mr. Sclater's "Notes on the Birds of Chili," P. Z. S. 1867, p. 319, with which the author had only recently become acquainted.

PIKE, Col. N.

A Visit to Round Island. Trans. Roy. Soc. Mauritius, 1870, pp. 11–22.

A few species of birds seen during the author's visit are mentioned. (See BARKLY, Sir H.)

POTTS, T. H. *On the Birds of New Zealand.* Trans. New-Zeal. Inst. 1870, pp. 40–78. (With illustrations.)

Fifty-three species of birds are mentioned in this paper, with special reference to their breeding-habits, the measurement of the eggs of all of them being given in a Table. The illustrations are sketches, sometimes of nests alone and sometimes of the positions in which they were found. Thus we have drawings of the nests of *Halcyon vagans, Acanthiza chloris, Petroica macrocephala, Podiceps hectori, Rhipidura flabellifera,* and *Botaurus pœcilopterus* on plate 4; those of *Anthornis melanura, Mohoua ochrocephala, Zosterops lateralis,* and *Sphenœacus punctatus* on plate 5; and on plate 6 those of *Prosthemadera novæ seelandiæ* and *Gerygone assimilis.*

POUCHET, A.

Transformation des Nids de l'Hirondelle de Fenêtre (Hirundo urbica, L.). Compt. Rend. lxx. 1870, pp. 492–496.

Translated in Ann. & Mag. N. H. ser. 4, v. pp. 307–308.

Relates to a supposed alteration in the structure of Martins' nests as observed in Rouen. See NOULET.

QUISTORP, Dr.

Ornitholog. Mittheilungen aus Neu-Vorpommern. J. für Orn. 1870, pp. 207–214.

REICHENOW, ANT.

1. *Ph. L. Martin, Die Praxis der Naturgeschichte.* J. für Orn. 1870, pp. 380–382.

A short review of this work.

2. *Ueber die Bedeutung der Eier-Maasse.* J. für Orn. 1870, pp. 385–392.

Gives the extreme measurements of the eggs of a number of European birds.

See also CABANIS.

REINHARDT, J.

Bidrag til Kundskab om Fuglefaunaen i Brasiliens Campos. Vidensk. Medd. Nat. For. 1870, pp. 1–267, t. viii.

The collections formed by the author and Dr. P. W. Lund between the years 1833–1835 in the Brazilian provinces of São Paulo, Goyaz, and Minas Geraes, Lagoa Santa being one of the principal stations, constitute the materials upon which this paper is based. As a summary of the birds occupying the campos or open country of Brazil, it will prove a valuable contribution to our knowledge of the ornithology of that vast country, which now, thanks to the labours of Prince Maximilian, Burmeister, and Natterer, seems to be pretty thoroughly explored. No less than 393 species are included in this paper, notes on all of them being added. Two species of Tyrannidæ are described as new, under the names *Elainea lundii* and *Myiopatis superciliaris*, both being figured. In a note on *Hirundinea bellicosa* (Vieill.), p. 144, Prof. Reinhardt demurs to the identifications made by Sclater (Ibis, 1869, pp. 196 *et seq.*), and, uniting Azara's species with *H. rupestris* (Max.), proposes to call the bird from Peru and New Granada *H. sclateri.*

RIDGWAY, ROBERT.

A New Classification of the North-American Falconidæ, *with Descriptions of Three New Species.* Proc. Ac. N. Sc. Phil. 1870, pp. 138–150.

The present paper is preliminary to a 'Monograph of the North-American Raptores,' now in preparation, and does little more than indicate the arrangement proposed to be adopted. The characters are drawn entirely from external features; and as some rather sweeping changes are proposed in the primary divisions of the family, we cannot but wish stronger grounds had been shown for the views adopted. A new species of Merlin called *Falco* (*Hypotriorchis*) *richardsoni* is described, and is said to differ widely from *F. æsalon* and *F. columbarius*, the adult male being brown like the female. *F.* (*Tinnunculus*) *leucophrys* is described as new. It is from Cuba and San Domingo, and is found with *T. sparveroides.* Mr. Ridgway goes on to differentiate the American Kestrels, which have, with the exception of an Antillean species, pretty successfully resisted all previous attempts in the same direction. *T. sparverius* is split into five "varieties," whatever that term may mean. It seems an evident contradiction to call a bird a "variety" and then go on to give definite characters whereby it may be distinguished. The term "variety" has a real meaning in Zoology, but not in the sense Mr. Ridgway uses it. A new generic name, *Onychotes*, is proposed for a bird believed to be from California; and the species is described as *O. gruberi.* It belongs to the Accipitrinæ of the present arrangement, which includes *Buteo*, near to which it is placed. We shall be better able to form an opinion on this paper when we have seen the promised monograph in its complete form, and the arguments in support of the views advanced are before us.

RIVIÈRE, CH.

Deuxième étude sur l'éducation des Autruches en Algérie. Bull. Soc. Acclim. sér. 2, vii. p. 566.

Gives a detailed account of the successful reproduction of *Struthio camelus* in the Jardin d'Acclimatation of Hamma, near Algiers, in continuation of a former article in the same journal (v. p. 639). The male performs nearly the whole duty of incubation, as in other Struthiones (*cf.* Sclater, P. Z. S. 1863, p. 233), the female coming on the nest to lay an additional egg when the male goes off.

ROLLESTON, GEORGE.

Forms of animal life, being outlines of Zoological Classification based upon anatomical investigation, and illustrated by descriptions of specimens and of figures. Oxford: 1870, 8vo, pp. Intr. clxviii, 268.

The Common Pigeon (*Columba livia*) is the subject chosen to illustrate the Class Aves. In the introductory portion of this work will be found some remarks upon the position of the Class in the animal kingdom.

ROWLEY, G. D.

P. Z. S. 1870, p. 52.

Exhibition of *Alauda sibirica* and other rare British-killed birds.

RUSS, KARL.

Jahresbericht aus meiner Vogelstube. J. für Orn. 1870, pp. 25–31.

Contains notes on various species, none calling for any special comment.

SABANAEFF, LEONIDA.

Preavaritelnoï Oscherk Faunoï Posvonoschnoëch Srednyago Oorala. Bull. Mosc. xlii. 1870, pp. 185–197.

According to Sharpe and Dresser (Zool. Rec. vii. p. 24) this article refers to the birds of the Ural Mountains, the range of each species being carefully defined. We regret that the language in which the article is written not only prevents our studying it, but will also, we fear, preclude that use being made of it which its apparent importance would seem to invite.

SALVADORI, TOMMASO.

1. *Letter from.* Ibis, 1870, p. 153.

Contains critical remarks on the portion of Mr. H. Saunders's paper relating to Italian ornithology (Ibis, 1869, p. 391–397).

The occurrence near Pisa of *Terekia cinerea* is noticed, and the possibility of the identity of *Megalophonus anderssoni,* Tristr., with *M. rufocinnamomeus,* Salvad., is suggested.

2. *Letter from.* Ibis, 1870, p. 296.

Allows the identity of *Pitta kreffti* with *P. simillima,* Gould.

3. *Letter from.* Ibis, 1870, p. 539.

On the origin of the specimen of *Hypocolius ampelinus* in the Turin Museum.

4. *Nuove specie di Uccelli dei generi* Saxicola, Brachypus, Homochlamys. Atti, Ac. Torino, 1870, pp. 506–512.

Two species of *Saxicola* are described, *S. albo-marginata* from the Tunisian Sahara, and *S. brehmi* from Nubia, or Abyssinia. The *Brachypus* is from the Philippine Islands, and is called *B. urostictus. Homochlamys* is a new genus of *Timaliidæ* allied to *Malacopteron.* The type is a new species called *H. luscinia.*

5. *Revista critica del Catalogo descrittivo di una collezione di uccelli fatta da Orazio Antinori nell' interno dell' Africa centrale nord.* Atti, Ac. Torino, 1870, pp. 719–747, t. i., ii.

A criticism on Antinori's Catalogue, extending over 69 of the species there mentioned. Three species are added to the list, and figures of *Eremomela canescens, Nectarinia acik, Drymœca troglodytes* and *D. antinorii* are given.

6. *Descrizione di una nuova specie del genere* Pitta. Atti, Soc. Ital. Sc. Nat. 1870, pp. 550–552.

See Zool. Record, vi. p. 68. The number of the 'Atti' containing this paper bears date "Febbrajo 1870." The species described is *Pitta kreffti.*

See also GIGLIOLI, H. H.

SALVIN, OSBERT.

1. *Additional Notes on* Mr. Lawrence's *List of Costa-Rica Birds.* Ibis, 1870, p. 107.

A continuation of a paper published in the same Journal in the previous year (1869, p. 310). Several alterations are here proposed in Mr. Lawrence's list (Ann. Lyc. N. Y. ix. p. 149), and a suggestion affecting several South-American CAPITONIDÆ (to the effect that the males and females had been universally considered to be distinct species) is made. According to the author, *Capito hartlaubi* is the ♀ of *C. bourcieri*, *C. melanotis* (partim) the ♀ of *C. richardsoni*, *C. melanotis* (partim) the ♀ of *C. aurantiicollis*, and *C. tschudii* the ♂ of *C. glaucogularis*. A list of 19 species, not mentioned by Mr. Lawrence, but found in Costa Rica, is added; and the whole number of birds now known to occur in this country is shown to amount to 520.

2. *On some Collections of Birds from Veragua.* Part ii. P. Z. S. 1870, pp. 175–219, plate xvii.

A continuation of a former paper on the same subject (P. Z. S. 1867, pp. 129–161); 216 species are added to the avifauna of Veragua, raising the total number of observed species in this district to 432. In the introductory remarks reasons are given for considering Veragua, with Costa Rica and Panama, a section of the Central-American isthmus. The number of birds in this district is roughly estimated at 720. Of these 175, or about 25 per cent., are not found elsewhere. The new species described are *Thryothorus semibadius*, *Tachyphonus nitidissimus*, *Empidonax atriceps*, *Chiromachæris aurantiaca*, *Antrostomus saturatus*, *Chætura fumosa*, *Lophornis adorabilis*, *Selasphorus torridus*, *S. ardens*, *Chloronerpes simplex*, and *Melanerpes chrysauchen*. A map (plate xvii.) shows most of the localities visited by the collector Enrique Arcé, and, including Costa Rica and Panama, gives the whole of the south-eastern section of the great Isthmus.

See also SCLATER and SALVIN.

SARATZ, JEAN.

Les Oiseaux de la Haute Engadine. Bull. Soc. Orn. Suisse, ii. pp. 122–146.

M. Saratz's paper is prefaced by a short description of the district of the Upper Engadine by M. V. Fatio. The list itself comprises 144 species of birds. Notes respecting the localities where they were observed, their local names, and observations relating to the migrations of many of the species mentioned are briefly added.

SAUNDERS, HOWARD.

Letter from. Ibis, 1870, p. 298.

A reply to Dr. Salvadori's criticism of Mr. Saunders's paper relating to certain Italian birds.

SCHLEGEL, F.

Die Beos oder Minos (Gracula). Zool. Gart. 1870, p. 9.

Popular remarks on the species of Grackles (*Gracula*), particularly as regards their habits in captivity.

SCHMIDT, DR. MAX.

Fortpflanzung des gemeinen Cormorans (Phalacrocorax carbo) *in Gefangenschaft.* Zool. Gart. 1870, p. 12.

Account of the breeding of a pair of Common Cormorants in the Frankfort Zoological Garden in 1867.

SCLATER, P. L.

1. *Note on the Systematic Position of* Indicator. Ibis, 1870, p. 176.

The systematic position of this anomalous form is thus summed up :—

1. *Indicator* differs in important particulars, both of osteology and pterylosis, from the true *Cuculidæ,* and cannot be permitted to remain in the same family.

2. Mr. Blyth's suggestion that *Indicator* might belong to the *Picidæ* is not supported by facts.

3. *Indicator* and its allied forms *Melignothes, Hetærodes,* and others, must be for the present regarded as constituting an independent family of *Coccygomorphæ* sive *Coccyges,* which should be called *Indicatoridæ.*

4. The family *Indicatoridæ* may be best placed temporarily in the second section of the *Coccygomorphæ,* as arranged by Prof. Huxley, next to the *Capitonidæ.*

A woodcut illustrates the sterna of *Indicator minor* and *Megalæma asiatica.*

2. *Letter from.* Ibis, 1870, p. 296.

Gives the correct locality of *Æthopyga dabrii, Lophophorus l'huysi* and *Ithaginis geoffroyi.* The locality of *Thaumalea amherstiæ* is also referred to.

3. *On some new or little-known Birds from the Rio Paraná.* P. Z. S. 1870, p. 57, plate iii.

These remarks apply to specimens, sent for examination by the Smithsonian Institution, which were collected during Capt. Page's expedition up the Parana river. *Coryphistera alaudina* is figured; and a Tyrant bird is described as *Cnipolegus cinereus,* the characters of the wing, bill, and foot being illustrated by a woodcut.

4. P. Z. S. 1870, p. 128.

A note on the locality of *Thaumalea amherstiæ* and other *Phasianidæ.*

5. P. Z. S. 1870, p. 157.

Exhibition on behalf of Dr. Salvadori of a drawing of *Otidiphaps nobilis,* Gould.

6. *Notice of the arrival in the Society's Gardens of living specimens of two newly described species of* Phasianidæ. P. Z. S. 1870, p. 162, plates xiv., xv.

The species here referred to and figured are *Lophophorus sclateri* and *Ceriornis blythi,* from Upper Assam. A list of the species of *Ceriornis* is given.

7. *Further Notes on the Cuckoos of the genus* Coccyzus. P. Z. S. 1870, p. 165.

Eight species of this American genus are now recognized, of each of which the full synonymy, a description, and also the geographical range are given.

8. P. Z. S. 1870, p. 219.

In his "Additions to the Society's Menagerie" Mr. Sclater mentions the arrival of living specimens of four Hornbills of the genus *Buceros,* and of four Burrowing Owls (*Pholeoptynx cunicularia*).

9. *Notices of some new or little-known species of South-American Birds.* P. Z. S. 1870, pp. 328–330.

The new species described are *Thryothorus rufiventris, Phily-*

dor consobrinus, and *Melanerpes pulcher*. The synonymy of *Chætura poliura* and *C. cinereicauda* is rectified, *C. brachycerca*, Scl. & Salv., being a synonym of the former name.

10. P. Z. S. 1870, pp. 381–383.

In his notes on additions to the Menagerie of the Zoological Society, Mr. Sclater draws attention to the differences between *Ibis bernieri* and *I. æthiopica*, the distinction being shown by woodcuts. There are also notes on *Numida verreauxi*, *Conurus nandaya*, *Heteralocha gouldi*, and *Dacelo cervina*.

11. *Report on Additions to the Society's Menagerie in June, July, August, and September* 1870, *with description of* Buceros subcylindricus. P. Z. S. 1870, pp. 663–671, plates xxxvi.–xxxix.

Several species of birds are mentioned in this Report, special attention being called to the following, three of them being figured:—*Ibis strictipennis*, *Sarcorhamphus gryphus*, *Chunga burmeisteri* (plate xxxvi.), *Cygnus coscoroba*, *Metopiana peposaca* (plate xxxvii.), *Dafila spinicauda* (plate xxxviii.), and *Mareca chiloensis*. There is also a note on the breeding of *Cygnus buccinator*. A species of Hornbill, from West Africa, is described as *Buceros subcylindricus* and figured (plate xxxix.).

12. *Report on Additions to the Society's Menagerie in October and November*. P. Z. S. 1870, pp. 796–798.

The species mentioned as having been received alive in the Zoological Society's Menagerie are *Ortalida ruficauda* and *Strigops habroptilus*.

13. *Descriptions of three apparently new species of Tyrant birds of the genus* Elainea, *with remarks on other known species*. P. Z. S. 1870, pp. 831–835.

The three species described are *Elainea gigas*, *E. fallax*, and *E. pudica*. Woodcuts exhibit the wings and head of each of these species. A list of 16 species grouped under three heads is added, being the species of the genus *Elainea* contained in the author's collection.

SCLATER, P. L., and SALVIN, OSBERT.

1. *Third List of Birds collected, during the Survey of the Straits of Magellan, by* Dr. Cunningham. With additional Note by the Editor. Ibis, 1870, pp. 499–504.

A list of 33 species of birds is given, with the localities where they were obtained, and the dates of their capture. Notes on three of them are added. The Editorial note refers to the eggs obtained by Dr. Cunningham during the expedition of the 'Nassau.' They appear to belong to 15 species; but as only seven of that number are determined without doubt, the remainder might as well have been omitted from the catalogue. With regard to M. Verreaux's determination of the feathers found in a certain nest, we have to remark that the *Astur pileatus* should probably have been called *Accipiter chilensis*. *Diplopterus*, though common at Mendoza, is not known as a Chilian genus; and *Porzana albogularis* hardly occurs outside the limits of the Columbian State of Panama.

2. *Characters of new Species of Birds collected by Dr. Habel in the Galapagos Islands.* P. Z. S. 1870, pp. 322–327.

Dr. Habel's collections were made in Indefatigable, Bindloes, and Abingdon Islands, none of which had been previously investigated. A list of 37 species is given, and of the number of each collected, the total number of skins being 460. Seven species are described as new, viz. *Certhidea fusca, Camarhynchus variegatus, C. habeli, C. prosthemelas, Cactornis abingdoni, C. pallida,* and *Nycticorax pauper*. Woodcuts showing the bills, feet, and wings of all the species, except the last mentioned, are given. The paper is a provisional one, a complete memoir on the ornithology of the Galapagos being in course of preparation.

3. *Synopsis of the Cracidæ.* P. Z. S. 1870, pp. 504–544.

A complete synopsis of this family, divided into four sections. I. Introductory remarks, p. 504. II. History of the Group, p. 505: the whole literature of the subject is here investigated. III. Synopsis of the species. These are 52 in number, and are divided into 3 subfamilies:—1st, Cracinæ, containing 4 genera, and 12 species; 2nd, Penelopinæ, containing 7 genera and 39 species; and 3rd, Oreophasinæ, containing *Oreophasis derbianus*. The complicated synonymy of the species is here discussed. IV. Geographical Distribution. A Table shows the distribution of each species; and notes are added showing the number of species met with in the chief divisions of the Neotropical region. One species, *Ortalida ruficrissa*, is described as new.

4. *On some recent Additions to the Avifauna of Mexico.* P. Z. S. 1870, pp. 550–551.

Five species are here mentioned.

5. *On Venezuelan Birds collected by Mr. A. Goering.* Part iv. P. Z. S. 1870, pp. 779–788, plates xlvi., xlvii.

The birds mentioned in this paper were all collected by Mr. Goering, near Merida, in Venezuela, the whole collection being one of great interest. A list of the species, 106 in number, is given, with the localities where they were obtained; and notes to 22 of them are subjoined. The following species are described as new:—*Setophaga albifrons, Diglossa gloriosa, Chlorospingus goeringi, Buarremon meridæ, Grallaria griseonucha, Ochthoëca superciliosa, Ochthoëca nigrita, Conurus rhodocephalus* and *Urochroma delectissima. Merula atrosericea,* Lafr., is shown to be *Turdus serranus,* Tsch.; *Sphenops ignobilis,* Scl., is referred to the genus *Chlorospingus,* and *Chrysomitris bryanti,* Cassin, to *C. xanthogastra,* Du Bus; *Chlorospingus goeringi, Diglossa gloriosa,* and *Urochroma delectissima* are figured.

6. *On Birds collected by Mr. George M. Whitely on the Coast of Honduras.* P. Z. S. 1870, pp. 835–839.

The names of 139 species are given in this list, and notes on six of them are added.

7. *Descriptions of five* new species of Birds from the United States of Columbia.* P. Z. S. 1870, pp. 840–844, plate liii.

The species here described are *Pheucticus uropygialis, Synallaxis wyatti, Tyranniscus leucogonys, T. improbus,* and *T. griseiceps.* The three latter are figured; and a Table showing the diagnostic characters of the nine species of the genus *Tyranniscus* is given, together with their synonymy &c. A sixth species is described as *Trogon chionurus.* It has since been called *T. eximius* by Mr. Lawrence (Ann. Lyc. N. Y. x. p. 11, Feb. 1871).

SELENKA, DR. EMIL.

1. *Sur la Morphologie des Muscles de l'épaule chez les Oiseaux.* Arch. Néer. des Sc. Nat. 1870, pp. 48–54.

Contains some short notes on the pectoral and other adjoining muscles of the shoulder in birds, and their morphology, and in particular an account of a somewhat abnormal structure in the *pectoralis minor* of the Pelican, which is illustrated by figures. The subject will be treated of at greater length in a forthcoming part of Bronn's 'Thierreich,' for which Prof. Selenka prepares the portion relating to the birds.

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* *Lege* six.

2. *Dr. H. G. Bronn's Klassen und Ordnungen des Thier-Reichs, wissenschaftlich dargestellt in Wort und Bild.* Sechster Band, iv. Abtheilung, Vögel: Aves, 3. 4. 5. 6. Lieferungen. Leipzig und Heidelberg: 1870. 8vo, pp. 81–144.

Dr. Selenka here continues his observations on the bones and muscles of the class Aves. *Cf.* Zool. Rec. vi. p. 30. The undertaking is still incomplete, but, so far as it has advanced, gives promise of a useful work. The plates, now 24 in number, and taken from a variety of subjects, fully illustrate the subjects discussed.

SHARPE, R. B.

1. *A Monograph of the* Alcedinidæ *or Kingfishers.* London: 1870. Parts vii.–xiii. Royal 8vo.

Rapid progress was made with this work in 1870, Mr. Sharpe having succeeded in issuing eight parts during the year, parts x. & xi. on the same date. The work having been frequently noticed in these pages during its progress, it will suffice for us to say that, whilst the plates equal those first issued in execution, the letterpress shows signs of additional care. The species figured and described in the above-mentioned parts are as follows:—Part vii. *Ceryle torquata, Alcedo grandis, Alcyone pulchra, Halcyon cyanoventris, H. albiventris, H. senegalensis, H. malimbica* and *Dacelo leachi.* Part viii. *Pelargopsis amauroptera, P. leucocephala, P. gouldi, P. burmanica, P. floresiana, Ceyx sharpii, Dacelo cervina* and *D. occidentalis.* Part ix. *Pelargopsis melanorhyncha, Alcedo euryzona, A. bengalensis, Halcyon coromanda, H. gularis, H. erythrogaster, H. lazuli* and *Tanysiptera hydrocharis.* Parts x. and xi. *Alcedo moluccensis, A. asiatica, Alcyone azurea, Ceryle americana, Ceyx dillwynni, Halcyon smyrnensis, H. diops, H. macleayi, H. nigrocyanea, H. concreta, H. pyrrhopygia, H. sordida, H. cinnamomea, Monachalcyon monachus, Tanysiptera margarethæ, Dacelo gigas.* Part xii.

Pelargopsis gurial, Halcyon semicærulea, H. chloris, H. fosteri. H. sancta, Todirhamphus recurvirostris, Tanysiptera acis, T. doris; and Part xiii. *Alcedo ispida, A. quadribrachys, Halcyon chelicutensis, H. australasiæ, H. funebris, H. sacra, Todirhamphus veneratus* and *T. tutus.*

2. *On a fourth Collection of Birds from the Fantee Country.* Ibis. 1870, pp. 52–59, plates ii., iii.

This paper is a continuation of others on the same subject published in this Journal. Twenty-nine species are here enumerated. Three species are described as new, viz. *Nectarinia fantensis, Cassinia finschi,* and *Pytelia hypogrammica.* The species figured are *Cassinia rubicunda, C. finschi,* and *Astur macrurus.*

3. *Letter from.* Ibis, 1870, p. 152.

Gives remarks upon the distinctions between the Scandinavian *Acredula caudata* and the species found in the British islands (*A. rosea*).

Saxicola modesta, Tristr., is also stated, on the authority of Prof. Sundevall, to be identical with *Erithacus schlegeli.*

4. *On the* Oriolidæ *of the Ethiopian Region.* Ibis, 1870, pp. 213–229, plates vii., viii.

Eight species of African Orioles are recognized in this paper, the full synonymy and descriptions of each being given, as well as notes on their habits, range, &c. A synoptic Table shows their diagnostic characters; and two plates give representations of four of the species, viz. *O. nigripennis, O. notatus, O. brachyrhynchus* and *O. larvatus.*

5. *Critical Remarks on Dr. von Heuglin's 'Ornithologie Nord-ost-Afrika's.'* Ibis, 1870, pp. 421–435.

Many suggestions as to the correct nomenclature of the species mentioned in Dr. v. Heuglin's work, are made in this review, which must be consulted by all who study the ornithology of North-east Africa.

6. *On additional collections of Birds from the Fantee Country.* Ibis, 1870, pp. 470–488, plate xiv.

The materials from which this list is drawn were contained in five collections from this locality, including specimens lent by the authorities of the Leyden Museum, and others in the possession of Mr. Swanzy.

Before proceeding to the list, the author makes a number of corrections to his former papers on West-African birds. Seventy-seven species are added in this list, bringing the number of birds of Fantee up to 204. The following are described as new :—*Illadopsis gularis, Drymœca swanzii, Drymœca brachyptera, Pytelia schlegeli, Chætura ussheri* and *Syrnium nuchale.* The species figured are *Drymœca brachyptera* and *Pytelia schlegeli,* ♂ and ♀.

7. *On a New Muscicapine Bird from Madagascar,* Ibis, 1870, p. 498, plate xv.

A new generic name, *Pseudobias,* is proposed for a species here called *P. wardi.* The plate represents this bird.

8. *Letter from.* Ibis, 1870, p. 538.

Corrects remarks made in the criticisms on Dr. von Heuglin's work.

9. *On the genus* Pelargopsis. P. Z. S. 1870, p. 61.

A complete monograph of this genus, comprising eight species. Of these the following are described as new :—*P. gouldi, P. fraseri, P. burmanica,* and *P. floresiana.* Tables of their diagnostic characters and geographical distribution are given.

10. *On* Campephaga anderssoni, *an apparently undescribed species of this genus from South-western Africa.* P. Z. S. 1870, p. 69, plate iv.

This paper contains a description and plate of this supposed new species.

11. *On the Birds of Angola,* Part ii. P. Z. S. 1870, p. 142, plate xiii.

A nominal list of 39 species is given. *Laniarius monteiri* is described and figured as a new species, and a figure of *L. icterus* is also given.

12. *On the* Hirundinidæ *of the Ethiopian Region.* P. Z. S. 1870, p. 286.

A very complete monograph of the African Swallows. The Hirundinidæ treated of are divided into two subfamilies, *Psalidoprocninæ* and *Hirundininæ.* The former of these groups contains a single genus, *Psalidoprocne*, with four species. The *Hirundininæ*, on the other hand, contains six genera,—*Chelidon* with two species, *Petrochelidon* with one, *Phedina* with two, *Cotyle* with seven (to which *C. minor*, Cab. is added, with doubt), *Waldenia* with one, and *Hirundo* with twenty. The total number of species recognized is 38; and a Table of their distribution is given. The synonymy of each species is very completely investigated.

13. P. Z. S. 1870, p. 334.

Exhibition of a specimen of *Podoces panderi*, and opinion expressed that the bird will prove to be a Desert-Starling, allied to *Pastor*, or perhaps to *Dilophus*, some characters, however, pointing to *Certhilauda*.

14. *Contributions to the Ornithology of Madagascar.* Part I. P. Z. S. 1870, pp. 384–401, plate xxix.

Forty species are mentioned in this paper, all of which were collected by Mr. A. Crossley. A new genus, *Oxylabes*, is proposed for *Ellisia ? madagascariensis*, Hartl.; and a woodcut illustrates its characters. *Ceblepyris major* is described as a new species; *Mystacornis crossleyi* is a new genus and species, a plate of which is given, as well as a cut of the head, wing, and leg; and, lastly, *Corethrura insularis* is described as a new species.

15. *On a Collection of Birds from China and Japan. With Notes by the collector, Robert H. Bergman.* Ann. N. H. ser. 4, vol. vi. p. 157.

The species mentioned in this paper are 25 in number.

See also Dresser and Sharpe.

SHARPE, R. B., and DRESSER, H. E.

On some new or little-known points in the Economy of the Common Swallow (Hirundo rustica). P. Z. S. 1870, p. 244.

Several phases of plumage through which the Swallow passes are described; and its range is shown to extend to Natal and the Cape Colony.

SHELLEY, ERNEST.

1. *Letter from.* Ibis, 1870, p. 149.

Description of the habits, nest, and eggs of *Elanus cæruleus* in Egypt.

2. *Letter from.* Ibis, 1870, pp. 445–448.

Two supposed new species of birds from Egypt are described in this letter, viz. *Cypselus pallidus* and *Turtur sharpii.*

SMITH, ALFRED CHARLES.

Narrative of a Spring Tour in Portugal. London: 1870. 8vo, pp. 220.

Already noticed in these pages (*cf.* Ibis, 1870, p. 266).

SOUTHWELL, THOMAS.

On the Flight of Birds. Trans. of the Norfolk and Norwich Naturalists' Society, 1870, pp. 41–59.

Claiming little originality for the views the author here puts forward, he has nevertheless collected a number of interesting notes on this subject (see MAREY).

STEIN, Dr. FRDR.

Ein Ei im Eie. J. für Orn. 1870, p. 144.

Gives a description of one egg of a common Fowl being found within another.

STEVENSON, HENRY.

1. *The Birds of Norfolk, with remarks on their habits, migration, and local distribution.* Vol. ii. London and Norwich: 1870. 8vo, pp. 1–443. 3 plates.

Already noticed in these pages (*anteà,* p. 251).

2. *On the Meres of Wretham Heath.* Trans. Norf. and Norw. Soc. 1870, pp. 36–41.

An account of a visit to these meres, and of the birds seen there.

3. *Miscellaneous Notes and Observations.* Trans. Norf. and Norw. Soc. 1870, pp. 59-62.

The occurrence in Norfolk of *Aquila chrysaëtus* and *Grus cinerea* is recorded; there is also a note on the mortality amongst Swallows and Martins.

STÖLKER, Dr. CARL.

1. *Ueber Aufzucht des Reisfinken in Gefangenschaft* (Padda s. Oryzornis oryzivora). J. für Orn. 1870, pp. 81–84.

An account of the breeding of this species in captivity.

2. *Ornithologische Beobachtungen.* J. für Orn. 1870, pp. 84–88.

Contains sundry notes on *Œdicnemus crepitans, Milvus regalis,* and *Fulica atra,* and also a description of a hybrid between the Common and Muscovy Ducks.

3. *Abnormitäten aus meiner ornithologischen Sammlung.* J. für Orn. 1870, pp. 88–91.

Treats of certain abnormal structures, albinisms, melanisms, and varieties of coloration in certain specimens contained in the author's collection.

4. *Bibliographia Ornithologica Helvetiæ.* Bull. Soc. Orn. Suisse, ii. pp. 89–119.

The author first gives a catalogue of works of reference relating to Swiss ornithology, arranged under the following heads:—*Fauna helvetica, Fauna topographica, Fauna cantonalis,* and *Varia.* Then follows 'Specielle Ornithologie,' where each Swiss species, arranged according to the system of Meyer and Wolf, is recorded, with references to works wherein the species is mentioned. A useful compilation to those studying Swiss ornithology.

STOLICZKA, Dr. F.

A Contribution to Malayan Ornithology. J. A. S. B. 1870, pt. ii. p. 277.

In this important paper the author gives an account of a collection of about 300 specimens made by a collector during a month's excursion into the interior of the province Wellesley, just opposite Penang, which has hitherto been little explored. Ninety-five species are enumerated, and many critical remarks on range, affinities, and other points are given. Several imperfectly known species are redescribed. (Concerning this paper, see Lord Walden's critique, *anteà,* p. 158.)

STREETS, T. HALE.

Remarks on Huxley's Classification of Birds. Proc. Ac. N. Sc. Phil. 1870, pp. 84–88.

In the introductory remarks of this paper are some singular misstatements. Prof. Huxley certainly makes great use of the bones of the palate in dividing birds into groups; but these characters are not applied till after the main divisions have been established, and are certainly made subordinate to the number of caudal vertebræ, to the presence or absence of a keel to the sternum, and other characters. Then, again, the Cassowaries are certainly not typical of the Dromæognathæ, which contains the Tinamous alone, the name being derived from the Struthious structure of the palate of these singular birds. The rest of the paper contains criticisms upon, and additions to, Prof. Huxley's memoir.

SUNDEVALL, CARL J.

1. *Foglarne på ön St. Barthelemy, efter de af Dr. A. von Goës hemsända samlingarna bestämde.* Öfvers. af K. Vetensk. Ak. Förhandl., Stockholm, 1869, pp. 579–591.

A list of forty-seven species of birds is given as inhabiting the Island of St. Bartholomew and its shores. Some suggestive notes are added regarding some closely allied insular forms. A useful contribution to West-Indian ornithology.

2. *Foglarne på ön Porto Rico, efter Hr. Hjalmarsons insamlingar framställda.* Ibid. pp. 593–603.

Ninety species are here given as inhabitants of the Island of Porto Rico, which now, through the labours of Bryant, Taylor, and others, must be pretty thoroughly explored.

3. *Öfversigt af fogelslägtet* Dendrœca. Ibid. pp. 605–618.

The species of *Dendrœca*, twenty-four in number, here treated of, are divided into four divisions, based partly on the style of coloration of the component species, partly on the formation of the bill. The treatment of *Dendrœca petechia*, and the local forms into which it is here subdivided, is the most noticeable feature in this paper. The *Motacilla petechia* of Linnæus, based upon Edwards's t. 256 (ex patriâ ignotâ) is looked upon as a kind of type round which various local races arrange themselves. The Antillean races are called (a) *bartholemica*, (b) *cruciana*, (c) *barbadensis*, (d) *cubana*, (e) *jamaicensis*, after the islands to which they respectively belong. *D. aureola*, from the Galapagos Islands, is called (f) *galapagensis*; and the species usually called by recent writers *D. vieilloti* receives the names (g) *peruviana*, (h) *æquatorialis*, (i) *panamensis*. Prof. Sundevall, as usual, makes his meaning clear in the method he here adopts;

but we are hardly prepared so far to emancipate ourselves from old-established rules as to accept his as the best way of interpreting an exceedingly intricate question.

4. *Öfversigt af slägtet* Certhiola. Ibid. pp. 619—625.

The genus *Certhiola* is divided into two divisions, based on the presence or absence of a white alar speculum. Each division is again subdivided into two subdivisions, based upon the purity of the colouring of the yellow uropygium. No less than 20 species are differentiated under these heads, some of them doubtfully, it is true. No new name seems to be proposed, unless it be *C. sancti-thomæ* for the St.-Thomas bird. One from Minas Geraes, another from St. Croix, are described, but not named. Viewed with regard to geographical distribution the divisions indicated do not seem to yield satisfactory results; but we wait for the results of Dr. Finsch's labours, who will, we believe, shortly have something to say upon this genus.

SWINHOE, ROBERT.

1. *On the Ornithology of Hainan.* Ibis, 1870, pp. 77–97, 230–256, 342–367, plates iv., ix., x.

This paper gives the result of the author's investigations into the ornithology of the island of Hainan, made in 1868. The first portion gives some account of the island, and also a list of birds observed on the island of Naochow, which was visited on the voyage to Hainan. A list of 172 species of birds is then given, of which the following nineteen are described as new:—*Spilornis rutherfordi, Cypselus tinus, Micropternus holroydi, Megalæma faber, Dicæum minullum, Volvocivora saturata, Pericrocotus fraterculus, Buchanga innexa, Garrulax monachus, Pomatorhinus nigrostellatus, Hypsipetes perniger, Hemixus castanonotus, Criniger pallidus, Ixus hainanus, Phyllornis lazulina, Herpornis tyrannulus, Eulabes hainanus, Eulabes sinensis, Osmotreron domvillii.* The species figured are *Megalæma faber, M. nuchalis, Hæmixus castanonotus, Hypsipetes perniger,* and *Herpornis tyrannulus.*

2. *Letter from.* Ibis, 1870, p. 155.

Contains a description by Père David of a new Titmouse, *Parus pekinensis.*

3. P. Z. S. 1870, p. 111.

Remarks on the locality of *Thaumalea amherstiæ.*

4. *On the Pied Wagtails of China.* P. Z. S. 1870, p. 120.

Three species of Pied Wagtails are differentiated, two of them, viz. *Motacilla felix* and *M. francesi,* being here described as new. Woodcuts show the coloration of the head and breast of three of the species.

5. *On a new species of* Accentor *from North China.* P. Z. S. 1870, p. 124, plate ix.

Accentor erythropygius, sp. nov., from N. China, is described and figured.

6. *On the Pied Wagtails of China.* Part ii. P. Z. S. 1870, p. 129.

The distinctive characters of four species are here discussed, and a new one, *Motacilla frontata,* described; a woodcut shows the head and neck of *M. ocularis.*

7. *Descriptions of seven new species of Birds procured during a cruise up the River Yangtsze.* P. Z. S. 1870. p. 131, plate xi.

The species here described are *Lanius waldeni* (which is also figured), *Abrornis fulvifacies, Zosterops subroseus, Parus venustulus, Ægithalus consobrinus, Emberiza elegantula,* and *Phasianus decollatus.*

8. *On the Plovers of the genus* Ægialitis *found in China.* P. Z. S. 1870, p. 136, plate xii.

Eight species of this group are recognized, two of which are described as new, viz. *Ægialitis hartingi* and *Æ. dealbata.* The former is also figured.

9. *Zoological Notes of a Journey from Canton to Peking and Kalgan.* P. Z. S. 1870, pp. 427–451.

Most of these notes refer to Ornithology. Several new species are described, viz. *Ibis propinqua, Cygnus davidi, Calamoherpe concinens, Cypselus pekinensis, Loxia albiventris, Picus poliopsis, Arundinax flemingi, Emberiza tristrami, Falco cenchris,* var. *pekinensis, Carpodacus mongolicus,* and *Athene plumipes.*

10. *List of Birds collected by Mr. Cuthbert Collingwood during a cruise in the China and Japan Seas, with Notes.* P. Z. S. 1870, pp. 600–604.

The chief interest of this paper lies in the fact that many of the species mentioned, 33 in number, were taken at sea. The latitude and longitude where each individual was captured is given, and notes on their food.

11. *On four new species of Birds from China.* Ann. N. H. ser. 4, vol. vi. p. 152.

The species described are *Ephialtes glabripes, E. hambroecki, Cuculus michieanus* and *Henicurus leucoschistus.*

12. *Descriptions of three new species of Birds from China.* Ann. N. H. ser. 4, vol. v. p. 173.

The new species described in this paper are *Porzana mandarina, Siva torqueola,* and *Ixus andersoni.*

13. *The large Barbet of the Himalayas in want of a name!* Ann. N. H. ser. 4, vol. vi. p. 348.

The want is here supplied and the species called *Megalæma marshallorum*!

TACZANOWSKI, L.

1. *Uebersicht der Vögel, die in Algerien, Provinz Constantine, während der Reise von Ende November* 1866, *bis Ende April* 1867, *gesammelt und beobachtet wurden.* J. für Orn. 1870, pp. 33–56.

210 species are mentioned as having been collected or observed by the author, and notes on many of them are added. The *Alaudidæ* seem to have received especial attention; and there is a full note on the Raven of Algeria. A story is also told of a bird, supposed to be a Marabout (*Leptoptilus*), having been brought by an Arab to the travellers when staying at Ajmokra; but, no one being in at the time, it was not secured. We are not aware that any bird of this genus has ever been noticed in North Africa proper. In a subsequent article v. Heuglin criticises the names applied to some of the species mentioned in this article and makes suggestions as to others (see v. HEUGLIN).

2. *Nachtrag zu Dr. Dybowski's Verzeichniss der im Gebiete von Darasun beobachteten Vögel.* J. für Orn. 1870, pp. 305–312.

Critical notes on and additions to the list published by Dybowski and Parrex in 1868 (*cf.* Zool. Rec. v. p. 39). 26 species are noticed, and *Gallinago heterocerca,* Cab., fully described (see Cabanis).

Tristram, Rev. H. B.

1. *Letter from.* Ibis, 1870, p. 301.

Announces the discovery in India, by Mr. Brooks, of *Sylvia melanopogon.*

2. *Letter from.* Ibis, 1870, p. 444.

States that *Megalophonus anderssoni* is not the same as *M. rufo-cinnamomeus,* as suggested by Dr. Salvadori.

An Indian Warbler is described as new, under the name *Calliope yeatmani.*

3. *Notes on some Old-world species of Passerine Birds.* Ibis, 1870, pp. 493–497.

These notes refer chiefly to the identification of several species of Indian *Sylviidæ.* It is also remarked that Mr. Hume's genus *Jerdonia* cannot stand, the name being preoccupied in Mollusca. The distinctness of *Sylvia bowmanni* from *S. melanocephala,* doubted by v. Heuglin, is insisted upon. *Saxicola finschi,* Heugl., is said to be *S. libanotica.* Other notes on African birds follow. Dr. Tristram also describes the Algerian Dipper as *Cinclus minor. Pratincola robusta* is described as a new species; and *Drymœca anchietæ,* Bocage, *Chætops grayi,* Sharpe, and *Sphenœacus pycnopygius,* Sclater, are united under the latter (oldest) name.

4. P. Z. S. 1870, p. 4.

Exhibition of skins of *Aquila nævioides* and other Eagles from India.

Tschusi, Victor, Ritter v.

Ornithologische Mittheilungen, J. für Orn. 1870, pp. 257–278.

The first and principal part of this paper contains notes on Austrian birds, 10 in number; the rest consists of observations on *Cinclus aquaticus, Troglodytes parvulus,* &c.

TYTLER, ROBERT C.

Letter from. Ibis, 1870, p. 293.

Relates to the supposed identity of *Buchanga waldeni*, Beavan, with *Dicrurus himalayanus*, Tytl. See VERREAUX, JULES.

VERREAUX, JULES.

Observations ornithologiques par le Lieutenant-Colonel Rob. C. Tytler de l'armée indienne, traduites par M. J. Verreaux. Rev. Zool. 1870, p. 193.

A French translation of some notes communicated by Col. Tytler in letters to M. Verreaux relating to Indian species of *Corvus*. A supposed new species, founded on specimens obtained near Umballa*, is termed *Corvus affinis*, allied to *C. corone* of Europe (p. 194). The same species, apparently, is subsequently (p. 198) designated *C. punjahensis* (qu. *punjabensis*); and the Raven of the Andamans is named *C. andamanensis*.

VIAN, JULES, see ALLÉON et VIAN.

VILLADA, MANUEL M.

Aves del valle de Mexico. Naturaleza, pp. 94 et 146.

The first two parts of this article, which will be of great interest if properly worked out, are taken up by general introductory remarks on the classification of birds, &c. The author is assisted in his work by "D. Antonio Peñifiel and D. Jesus Sanchez, Preparadores del Museo Nacional." We are glad to hear of the existence of such an establishment in the Mexican capital.

WALDEN, ARTHUR, Viscount.

1. *On the Sunbirds of the Indian and Australian Regions.* Ibis, 1870, pp. 18–51, plate i.

Thirty-nine species of Sunbirds are recognized as coming within the author's limits. These are arranged under six genera, viz. *Arachnechthra* with 12 species, *Æthopyga* with 14, *Nectarophila* with 5, *Chalcostetha* with 6, *Anthreptes* with 1, and *Chalcoparia* with 1. The synonymy and geographical distribution of every species is treated of very fully and with great care. A list of several names applied by various writers apparently to members of this family, but which the author has not been able to recognize, is added. The name *Cosmeteira minima* is proposed for the Mysol race of *C. eques*, Less., from Waigiou. The paper concludes with a list of the Sunbirds described in the Systema Naturæ of Linnæus (12th ed.) and of Gmelin (13th ed.) as determined by the author. Two species are figured, *Æthopyga christinæ*, Swinh., and *Nectarophila grayi* (Wall.).

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* This word is written *Umhalla* throughout the article; but no doubt *Umballa* is intended.

2. *Letter from.* Ibis, 1870, pp. 293–294.

Relates to Mr. Hume's notes on the Yellow-headed Wagtails of India.

3. *Descriptions of some new species of Birds from Southern Asia.* Ann. N. H. ser. 4, vol. v. p. 218.

The species here described are *Sitta neglecta* from the Karen Hills, Burma, *Passer assimilis* from Toungoo, *Glaucomyias sordida* from Ceylon, *Prinia albogularis* from Coorg, *Megalæma inornata* from Malabar and Coorg, *Buchanga leucogenis* from Malacca, Cambodja, China, and Japan, *Buchanga mouhoti* from Cambodja, and *Buchanga wallacei* from Lombock.

4. *Descriptions of some new Species of Birds from Southern Asia.* Ann. N. H. ser. 4, vol. v. p. 416.

The following species are described :—*Geocichla layardi* from Ceylon, *Irena turcosa* from Java, and *Ephialtes jerdoni* from Malabar.

WALLACE, A. R.

Contributions to the theory of Natural Selection, a series of Essays. London : 1870. 8vo, pp. 384.

Cf. Ibis, 1870, p. 507.

WHITNEY, J. D.

Geological Survey of Californian Ornithology, vol. i. *Land-birds. Edited by S. F. Baird, from the M.S. and notes of J. G. Cooper.* 1870, pp. 592.

This is the first volume of an Ornithology of the State of California, and forms one of a series of zoological reports of the official Geological Survey of that flourishing state—the survey, " although called geological, having been intended to embrace within its scope natural history and topography." Dr. J. G. Cooper, the officer selected to prepare these reports by J. D.

Whitney (the State Geologist) is already well known for his zoological collections and discoveries in the far west, and has been engaged on this service since 1860. Dr. Cooper's report on the birds, when finished, was submitted to Prof. Baird for revision and publication, and has resulted in the work of which the present volume is the first instalment. To generic and specific characters, taken from Prof. Baird's 'Birds of North America,' are added Cooper's field-notes; and the remaining species of birds found in the other Western states have been inserted in their proper places, so that we have in fact a complete Ornithology of Western America, under the experienced editorship of Prof. Baird. The work is *profusely* illustrated with excellent woodcuts, representing the heads of every species, the structural peculiarities of every genus, and one small whole figure of a bird of each genus; so that it will be most valuable for the identification of species. The present contains the "Land-birds," *i. e.* Oscines, Clamatores, Strisores, Scansores, Raptores, Rasores, and Gallinæ of Prof. Baird's arrangement. Three new species are described—*Leucosticte littoralis,* Baird, p. 162, *L. campestris,* Baird, p. 163, and *Junco annectens,* Baird, p. 564. A second volume will contain the "Water-birds." An Appendix to the present volume contains an "explanation of terms used in describing the external form of birds," very carefully and elaborately prepared, and giving the Latin equivalents of the technical expressions.

WICKEVOORT-CROMMELIN, J. P. VAN.

Letter from. Ibis, 1870, p. 442.

Expresses doubts as to the specific distinctness of the Continental and British races of *Parus caudatus* as maintained by Mr. Sharpe.

WOOD, W. T.

1. *The Courtship of Birds.* Student, 1870, pp. 113–125, with two plates.

Describes the singular attitudes assumed by some species of birds during the period when the males court the females. One of the plates shows the cock *Tetrao cupido* of North America, and how he exhibits the peculiarities of his plumage, the singular superciliary, combs and bare inflatable pouches on each side of the neck to the admiring gaze of the hen. The other plate shows the attitudes assumed by the males of several other species of birds. These birds were most of them studied in the Gardens of the Zoological Society of London.

2. *The Owl-Parrot or Kakapo* (Strigops habroptilus). Student, 1870, pp. 492–499, with one coloured Plate.

Relates chiefly to the specimen for some time deposited in the Gardens of the Zoological Society by Mr. Sale. Notes by different observers of this species, both in a wild state and in confinement, are added.

WRIGHT, CHARLES.

Fourth Appendix to a List of Birds observed in Malta and Gozo. Ibis, 1870, pp. 488–493.

One species, *Sterna caspia*, is added to the list of Maltese birds, raising the number to 268. The rest of the paper is devoted to notes on species of rare and casual occurrence.

WYATT, CLAUDE, W.

Notes on the Birds of the Peninsula of Sinai. Ibis, 1870, pp. 1–18.

The first portion of this paper (pp. 1–10) is devoted to a description of the author's journey, with special reference to Ornithology. The rest records the species met with, together with those obtained by Mr. Holland during former visits to the Peninsula of Sinai. The names of 84 species are given, together with the localities where they were met with.

SUMMARY.

The following summary of the foregoing article will give some idea of the progress of ornithological science during the year 1870.

The number of authors whose names are mentioned above is 164, whilst the number of separate works, papers in scientific journals, proceedings, and transactions, as well as letters, notices, and reviews, reaches 316. The number of new generic names introduced is 22, and the number of species described as new is 288; lastly, the number of species figured is 270, in addition to which numerous plates illustrating the anatomy, nests, and eggs of many species have been published.

In conclusion we must add that this article can only be considered approximately complete; for it has frequently happened that works and papers have reached this country so long after the date of their issue that their insertion has been unavoidably omitted.

As we are going to press, two parts of M. Alphonse Milne-Edwards's important work, 'Oiseaux Fossiles de la France,' containing livraisons 31–38, have reached us. These all bear date 1870; but our abstract of them must be postponed to next year.

The length of the last article having forced us to exceed considerably our prescribed limits, we regret to be obliged to defer printing the communications sent us by numerous correspondents till the next number of this Journal.

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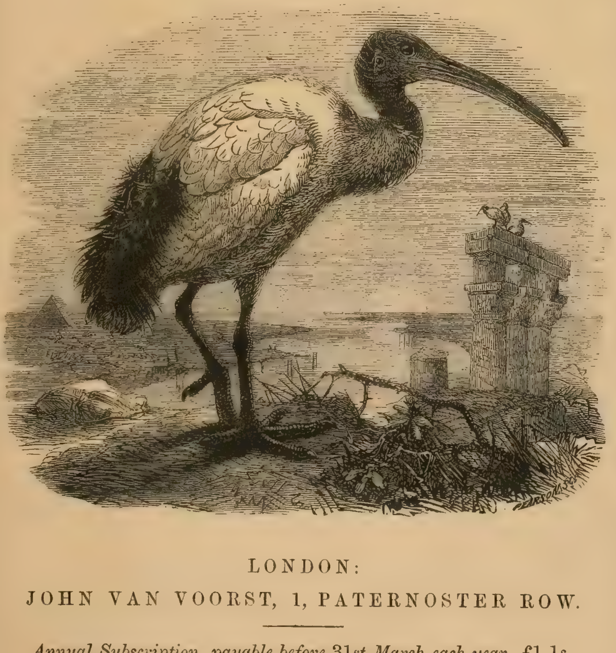

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